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A Banking Research

Program Study by the

Graduate School of Business Administration of

New York University

Directed by Dr. Jules I. Bogen, Professor of Finance

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The Changing Composition of Bank Assets

by JULES I. BOGEN

PROFESSOR OF FINANCE

GRADUATE SCHOOL OF BUSINESS ADMINISTRATION

NEW YORK UNIVERSITY

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Preface

The Graduate School of Business Administration of New York University has conducted a program of research in major trends and problems of commercial banking over the past five years. Studies of the adequacy of bank earnings, the competitive position of commercial banks and the causes and effects of changing interest rates have been published under this program.

In no respect have the dynamic economic developments of recent years affected commercial banking so profoundly as in the changes that have taken place in the composition of bank assets. Serving as they do every sector of the economy, the commercial banks of necessity mirror in their assets the shifts that occur in the demands for credit.

How these asset changes have affected the commercial banking system, and particularly its ability to serve the future credit needs of a growing economy, are questions of broad public interest, as well as of great importance to bankers and their customers.

This study of the changing composition of bank assets was planned and carried on by Dr. Jules I. Bogen, Professor of Finance in the Graduate School of Business Administration. He was ably assisted by a research group headed by Philip R. Phillips, research coordinator of the project.

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JOSEPH H. TAGGART
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I Changes in Bank Assets Since World War II

The composition of the assets of commercial banks has undergone drastic changes since the end of World War II. These changes raise three basic questions about the present status and the future development of commercial banking. The questions are:

1. How have the quality of assets, the liquidity and the adequacy of the capital funds of commercial banks been affected by the asset shifts that have occurred?

2. Do commercial banks retain sufficient flexibility in their portfolios to serve future increases in credit needs that economic growth will generate?

3. As the flexibility of bank portfolios is lessened, what measures can be taken to assure commercial banking's ability to continue to serve the expanding and changing credit needs of a growing economy?

Before considering answers to these basic questions, the shifts that have occurred in the composition of commercial bank assets since 1945, and the causes of these shifts, will be surveyed.

The Sharp Rise in the Loan Ratio

The most striking change in the composition of bank assets has been a reversal of the relative place of loans and investments. At the end of 1945, when the wartime expansion of bank holdings of U. S. Government securities reached its culmination, investments accounted for 79% and loans for only 21% of the earning assets of all commercial banks. The term "earning assets", as here used, includes loans and investments. At the end of 1959, loans constituted 59% of these banks' earning assets and investments but 41%.

The sharp rise in the proportion of loans and decline in the proportion of investments has been characteristic of commercial banks in every size group and in every geographic area. It has been as pronounced among country banks, whose earning assets nearly doubled between 1945 and 1959, as among central reserve city banks, which had virtually no asset growth during the period, as the following table giving data for the member banks of the Federal Reserve System shows:

**Percentage Distribution of Loans and Investments of
Member Banks, 1945 and 1959**

Earning Assets	Central Reserve City Banks		Reserve City Banks		Country Banks		All Member Banks	
	1945	1959	1945	1959	1945	1959	1945	1959
Total (in billions)	\$32.1	\$32.2	\$40.1	\$61.6	\$35.0	\$64.1	\$107.2	\$157.9
U. S. Government Securities (%)	68	22	74	28	77	35	73	30
Other Securities (%)	5	9	5	9	7	12	6	10
Loans (%)	27	69	21	63	16	53	21	60

Asset Shift in Perspective

This reversal in the relative place of loans and investments among commercial bank assets, drastic as it has been, is in no sense a deviation from a "normal" asset pattern.

On the contrary, it marks a return to the asset pattern that has been normal throughout most of

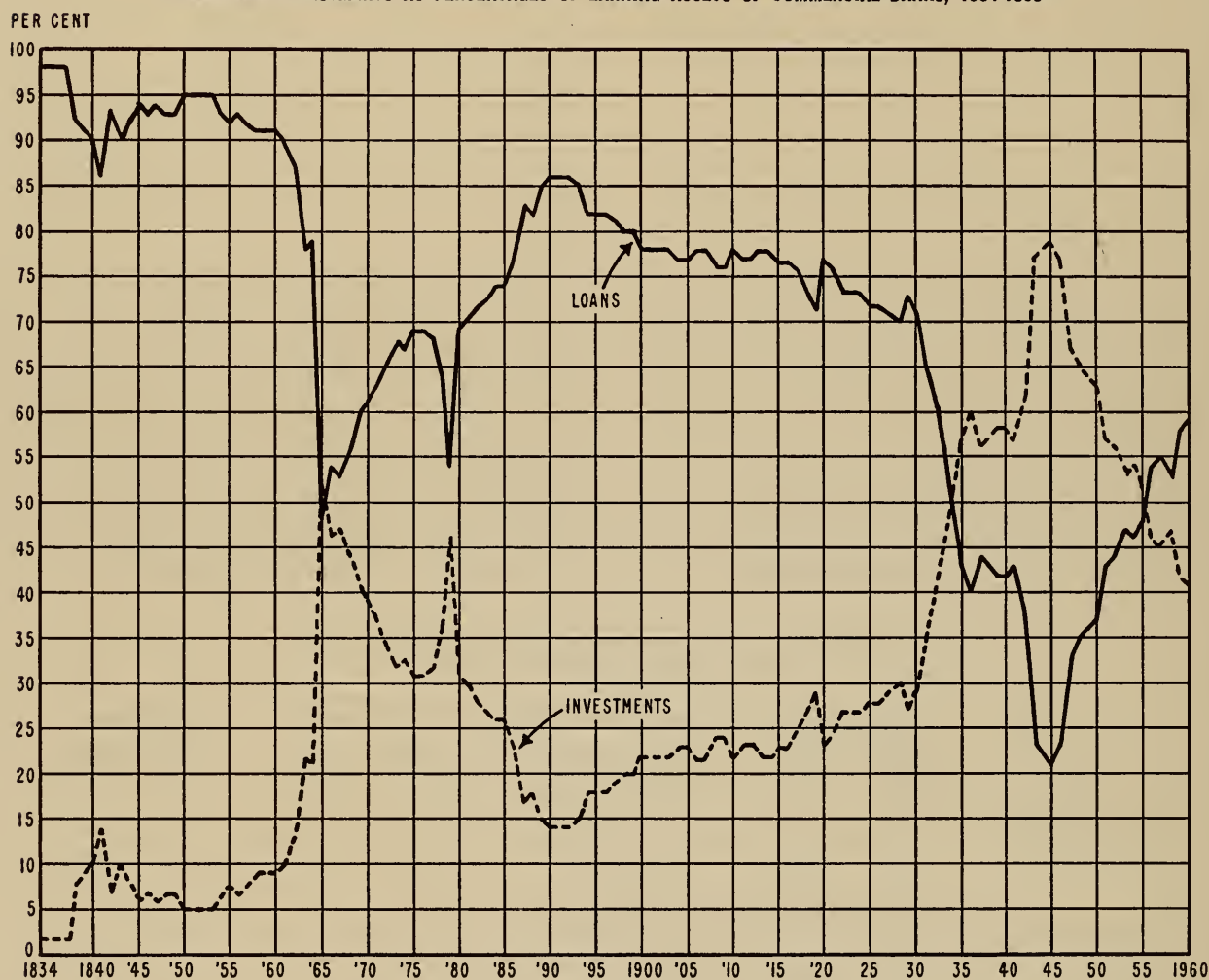
this country's banking history. Chart I traces the ratios of loans and investments to total earning assets since 1834. Over the whole period of 127 years, loans have exceeded investments, usually by a very wide margin, with but two exceptions—briefly in 1865 at the time of the Civil War and during the two decades 1934-1954. In the latter 20 year period, first the severe depression of the

1930's and then World War II caused both a huge increase in Treasury borrowing and a contraction in the demand for loans by private borrowers. Bank portfolios merely reflected the preponderant place of the Treasury among borrowers during

that era. But all through the half century 1881-1930, an era of economic growth interrupted by relatively short depressions, loans averaged well over 75% of earning assets, and at the end of no year were they less than 70%, as Chart I shows.

CHART I.

LOANS AND INVESTMENTS AS PERCENTAGES OF EARNING ASSETS OF COMMERCIAL BANKS, 1834-1960



SOURCES: Comptroller of the Currency, Annual Reports; U. S. Department of Commerce, Historical Statistics of the United States; Federal Reserve Bulletin.

All commercial banks except 1865-95, when statistics are of national banks.

Changes in the Character of Loans and Investments

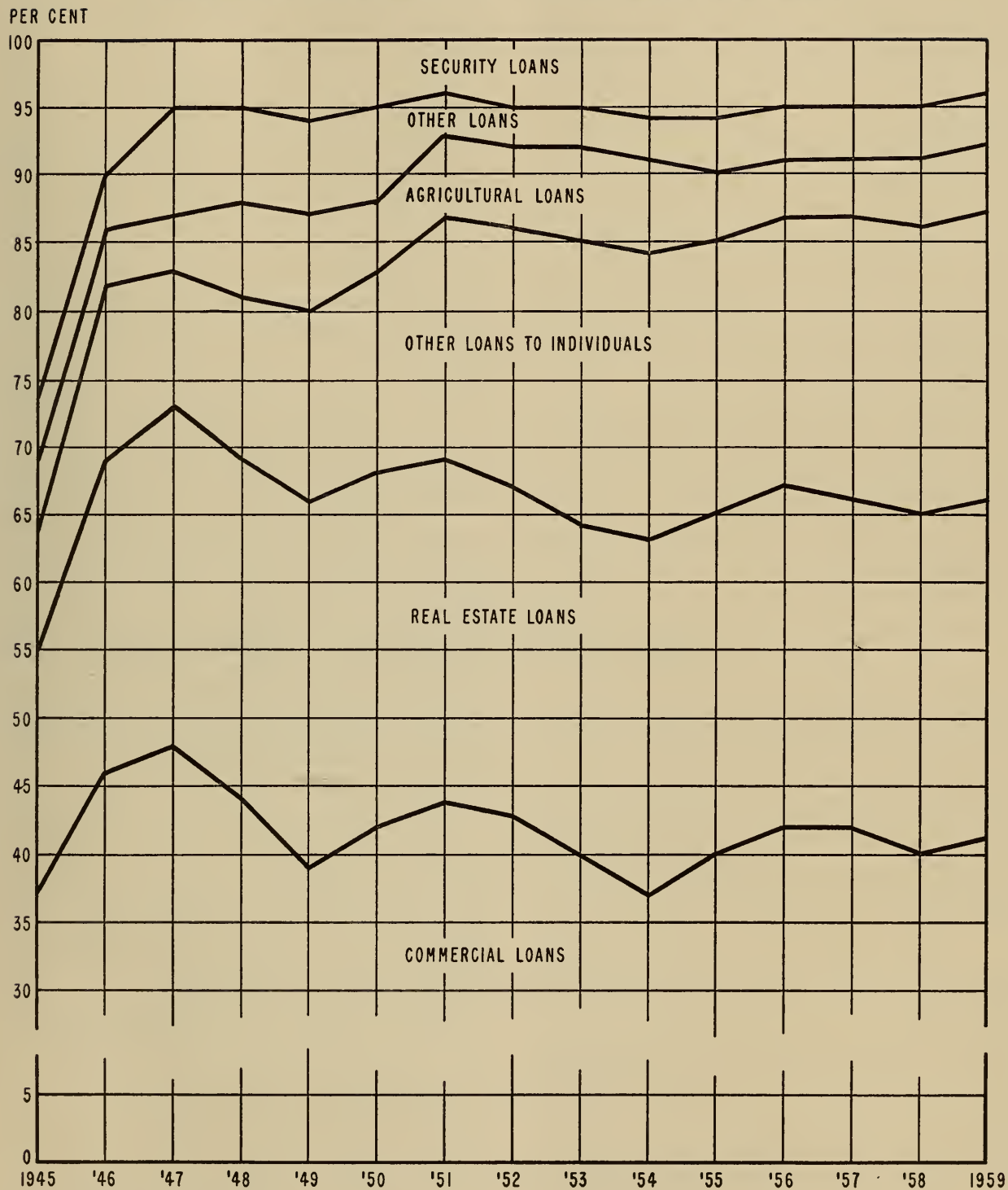
Not only the proportions but also the character of both the loans and the investments of com-

mercial banks have undergone major changes during the post-World War II period.

Chart II shows changes in the relative importance of the major classes of loans of commercial banks since World War II.

CHART II.

PERCENTAGE DISTRIBUTION OF LOANS BY TYPES, ALL INSURED COMMERCIAL BANKS, 1945-1959



SOURCE: Federal Reserve Bulletin.

A much larger proportion of bank loans is being made to finance consumption outlays, including the purchase of homes. Loans to finance personal expenditures, including loans on residential real estate, were 22% of all commercial bank loans in 1945 and 40% in 1959. The great increase in loans to finance consumption was not effected at the expense of business financing by the banks, however. Business and agricultural loans, including loans to other financial institutions such as finance companies, were 46% of the total in 1945 and 49% in 1959. Increased lending to individuals to finance consumption spending was offset by a sharp drop in the proportion of loans to purchase and carry securities, which declined from 26% to 4% of all commercial bank loans between 1945 and 1959.

There has also been a marked lengthening of the average maturity of bank loans during the post-war period due to the rapid growth of real estate mortgage, consumer instalment and business term lending. These three classes of loans together accounted for 33% of all commercial

bank loans in 1945 and over 53% at the end of 1959. At the same time, there has been a corresponding rise in regular amortization receipts by the banks, since these loans require periodic repayments of principal.

Two major changes have taken place in the investment security portfolios of commercial banks during the post-war era. The proportion of State and local government obligations to total investments rose from 4 to 21%, while the proportion of U. S. Government securities declined from 93 to 74%. There has also been a shortening of maturities within bank Government security portfolios. Treasury issues maturing in 5 years or longer were a third of commercial bank holdings of such securities in 1945 but only 15% at the end of 1959. Holdings have been concentrated in the 1-5 year maturity range, which accounted for 54% of the U. S. Government security holdings of commercial banks at the end of 1959 as compared with 31% at the end of 1945.

The causes of these drastic changes in bank assets are analyzed in the following section.

II Causes of Changes in the Composition of Bank Assets

Four factors have been responsible for the drastic shifts in the composition of commercial bank assets since 1945. These have been:

1. The unprecedented expansion and changes in the character of private credit demands.
2. The almost exclusive reliance during this period upon flexible monetary policy to keep economic growth within a sustainable rate and to combat inflation.
3. The sharp decline in the proportion of deposit-type savings flowing into commercial banks.
4. The efforts of commercial bank managements to satisfy demands for loans from credit-worthy borrowers.

Expansion of Credit Demands

The volume of credit required by the economy in peacetime is determined chiefly by the rate of

economic growth. The output of the American economy, measured by gross national product at constant prices, increased by an average of 3½ % a year between 1946 and 1959.

Credit needs also reflect changes in the level of costs and prices. Between 1945 and 1959, hourly wages increased by more than 5½ % and wholesale prices by 4% per annum on the average. This rise in costs and prices increased the volume of credit that businesses and individuals required to pay for needed assets.

The combination of a rapid increase in output and rising prices caused a nearly fourfold expansion of private debt between 1945 and 1959.

At the same time, major shifts occurred in the character of borrowing, which reflects spending patterns of the borrowers. During the post-war period, a much larger proportion of spending has been for durable goods. Almost 14% of personal

consumption outlays have been for durables in the 1945-59 period, compared with 9% in the preceding 15 years. Residential construction expenditures were eight times as large in 1945-59 as in the preceding 15 years. Nearly 70% of the \$312 billion of corporate asset acquisitions in the years 1945-59 consisted of new plant and equipment. State and local governments have had to provide new schools, highways and other facilities on an unprecedented scale for the needs of the growing population.

The character of borrowing since 1945 has reflected increased acquisitions of durable goods by individuals and businesses. Maturities and repayment terms have had to reflect this purpose, if borrowing is to be conducted on a realistic basis.

Reliance on Flexible Monetary Policy

The prevention of depressions has become a basic objective of national economic policy as embodied in the Employment Act of 1946.

During the 1950's, almost exclusive reliance was placed on bank credit restraint to implement this policy when unstable booms and inflation threatened the future stability of the economy. Credit restraint has been applied by creating a net deficiency of reserves for member banks as a whole through open market operations of the Federal Reserve System. Member banks were thus compelled to borrow from the Federal Reserve banks a part of the reserves they required to meet credit demands made upon them.

Demand deposits of commercial banks more than doubled during the World War II years as a result of huge purchases of Government securities by the banks. This caused stress to be placed on restraint of further expansion of demand deposits during the post-war period, to check inflationary pressures in the economy.

Chart III traces the net reserve position of member banks for the period since the Treasury-Federal Reserve accord of March, 1951, made possible a return to a flexible monetary policy. Between April, 1951, and the end of 1959, mem-

ber banks reported a net deficiency of reserves in 52 months and a net excess of reserves in 53 months. The restraining effect of net reserve deficiencies limited the increase in demand deposits of all commercial banks to \$32 billion or 27% for the whole period 1945-59, while loans expanded by 325%.

With the creation of demand deposits thus held within very narrow limits by restrictive credit policy, savings and other time deposits perforce became the chief source of funds to enable commercial banks to expand earning assets.

The Contraction in the Banks' Share of Deposit-Type Savings

Commercial banks attracted a dwindling proportion of the deposit-type savings flowing into financial institutions in the post-World War II period. In 1945, commercial banks received two-thirds of the increase in savings funds in banks, savings and loan associations and credit unions. In 1959, they accounted for less than a quarter of the increase.

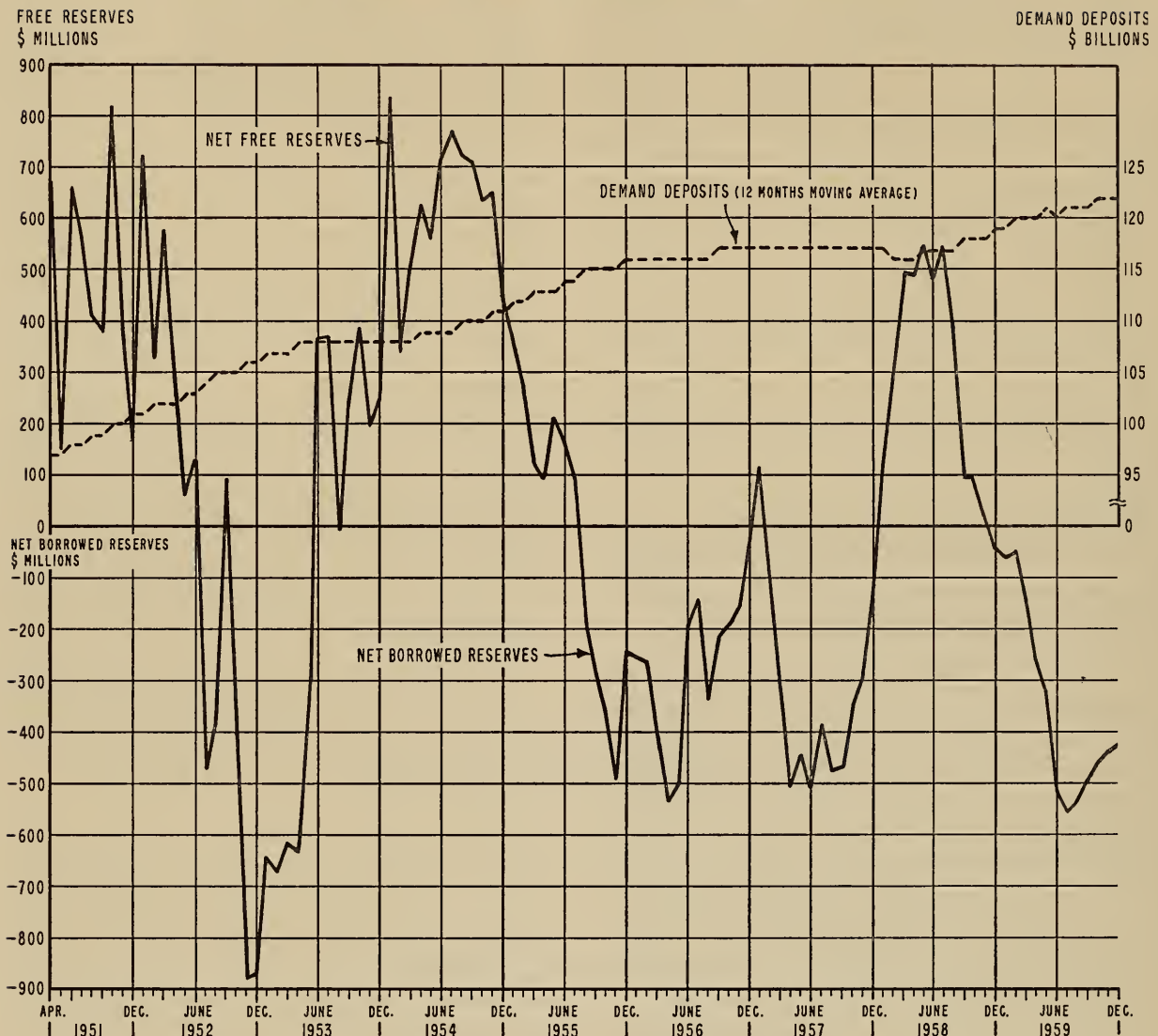
As a result, by the end of 1959 commercial banks held 41% of the deposit-type savings held by financial institutions. In 1945, they held 57% of such savings.

Savings and other time deposits in commercial banks increased by 119% between 1945 and 1959. But savings in savings and loan associations rose by 638%, or more than five times as fast. Because of tax and regulatory inequalities, including the ceiling upon interest rates that they may pay on savings and other time deposits, the commercial banks found themselves under a severe handicap in competing for deposit-type savings during the post-war era.

The small increase in demand deposits of commercial banks and their reduced share of the growth in deposit-type savings compelled commercial banks to resort to liquidation of investments for additional funds to meet the huge demands for loans from their customers during the post-World War II period. This called for fundamental reconsideration of bank asset management policies.

CHART III.

NET FREE RESERVES AND DEMAND DEPOSITS OF MEMBER BANKS, APRIL, 1951-DECEMBER, 1959



SOURCE: Federal Reserve Bulletin.

Bank Asset Management Policies

Commercial bank managements have strong incentives to expand loans when confronted with heavy demands from customers. The extension of credit to business and individuals is, in fact, the primary function of commercial banking.

There is no greater service that a bank can perform for the community it serves than to provide the loans needed by credit-worthy borrowers. An expansion of loans contributes to the eco-

nomic well-being of the community, and thereby broadens the market for bank services so that the bank shares in the prosperity it has helped to bring about. Moreover, banks obtain deposits and other business from their borrowing customers. The higher rates of return derived from loans provide additional earnings that have enabled banks to keep pace with mounting costs of operation and needed expansion of capital funds. In 1959, insured commercial banks obtained an average return of 5.75% on their loans and

2.80% on their investments in U. S. Government obligations.

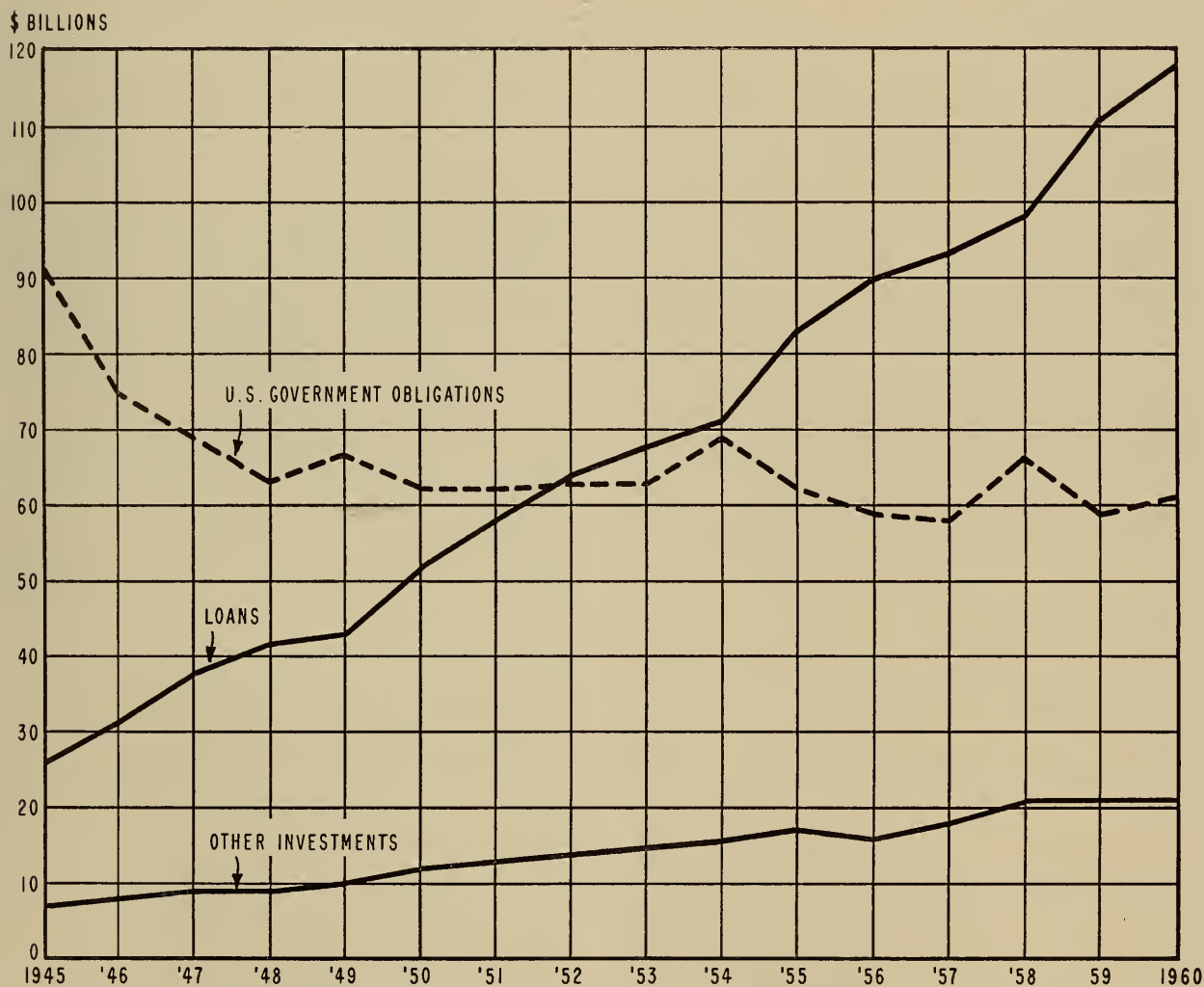
While private debt outstanding increased by 290% between 1945 and 1959, loans of commercial banks increased by 325%. Moreover, a considerable part of the credit extended to their customers by businesses and such financial institutions as sales finance and personal loan companies and factors was derived from bank borrowing.

Commercial banks also found it advantageous to expand their holdings of State and local government obligations more than fourfold in the post-World War II period, which witnessed a record volume of State and local financing. Tax-exemption of interest on such obligations made them attractive to banks.

As Chart IV shows, by reducing their holdings of Treasury obligations by more than a third between 1945 and 1959, commercial banks were

CHART IV.

LOANS, U. S. GOVERNMENT OBLIGATIONS AND OTHER INVESTMENTS OF ALL COMMERCIAL BANKS, 1945-1960



SOURCE: Federal Reserve Bulletin.

able to expand their loans and their investments in State and local government obligations more than fourfold, despite the small increase in demand deposits and their reduced share of the increase in deposit-type savings.

Commercial banks thus fulfilled their role as the chief credit granting institutions in the economy during the post-war era, and performed their

basic function of adapting the credit supply to the demands of the economy. This record was made possible by the shifts in asset composition that bank managements effected during the period.

The impact of these asset shifts upon the quality of assets, the liquidity and the adequacy of capital of commercial banks is analyzed in the following sections.

III Effects on Asset Quality

The strength of a bank is determined primarily by the quality of its assets.

Commercial banks had \$9.85 of loans and investments for each dollar of capital funds at the end of 1959. The quality of these earning assets, rather than the ratio of capital funds and reserves to assets, is the ultimate safeguard of soundness.

The quality of bank loans and investments is judged by the degree of certainty that they will be paid at maturity. U. S. Treasury obligations, backed by the taxing power of the Government of the United States, are assets of the highest quality. The contraction in holdings of Treasury securities and the sharp rise in loans and holdings of State and local government obligations since 1945 raise the question of how the quality of bank assets has been affected by these asset shifts.

Tests of Asset Quality

Tests that have been used to measure asset quality include:

1. The self-liquidating character of the transactions being financed.
2. The liquidity of the borrower.
3. The value of security pledged.
4. The earning power of the borrower.
5. The cash flow of the borrower.

In the past, the self-liquidating character of the transactions financed was given major weight as a test of loan quality. Loans to finance inventories or accounts receivable were considered of high quality because they were expected to be paid off automatically out of the proceeds of sale of the goods or collection of customers' accounts. This view, the classic English "real-bills doctrine", overlooked the fact that a going concern usually must acquire new inventories to replace those liquidated. Frequent renewals of maturing short-term business loans reflected the need for replacing inventories and receivables as they are turned into cash, except for purely seasonal variations in the volume of such assets required. Strictly seasonal increases in inventories and receivables account for only a limited part of borrowing needs in many industries, and even seasonal borrowings often can be repaid only when customers of the borrower can obtain credit to enable them to meet their obligations.

When short-term loans could not be renewed or repaid from new borrowings, as in the depression of the early 1930's, the self-liquidating character of individual transactions of a business did not of itself assure the ability to repay loans at maturity.

The *liquidity of the borrower* is a more inclusive test of asset quality because it looks beyond the particular transactions being financed by a loan. A strong liquid position indicates that the borrower possesses cash resources with which to meet

his obligations, whatever the purpose for which they were incurred. But liquidity, however ample, may become impaired in the future through asset acquisitions, payment of debts or operating losses. For that reason, earning power and cash flow, factors that will influence the *future* liquidity of the borrower, often prove to be more significant quality tests.

Security pledged to assure repayment of a loan safeguards its quality if the value of assets pledged is adequate at the time that a default occurs. In the depression of the 1930's, many losses were incurred on secured loans because of depreciation of real estate, securities or other pledged property under the conditions then prevailing.

While these tests of asset quality are useful where applicable, much more stress has been placed latterly upon earning power and cash flow of borrowers.

Earning power assures ability to repay debts when they mature in two ways. First, earnings are themselves a source of funds for debt repayment. Secondly, earning power enables the borrower to obtain funds through new borrowings or stock issues, if needed, to meet maturing debts.

In many cases, earnings as reported do not measure fully the ability to pay debts as they mature. Additional funds that can be used for this purpose are provided by depreciation and other non-cash deductions from earnings. On the other hand, a borrower may have other commitments to spend money that limit his ability to pay off debt. An inclusive *cash flow* projection ordinarily provides a more reliable indication of the quality of a loan, therefore, than earning power. The future cash flow of the borrower, rather than the nature of particular transactions being financed, assures the self-liquidating character of a loan because it will determine a borrower's over-all ability to meet interest and principal payments as they fall due on a continuing basis.

Emphasis on earnings and cash flow as loan quality tests has fostered expansion of consumer and home mortgage lending.

Cash Flow and Term Loans

The cash flow of the borrower is given primary emphasis in making term loans to business, a survey of the members of the Association of Reserve City Bankers indicated.

Cash flow coverage of debt service requirements was ranked first among the yardsticks used in term lending by 53 of 62 banks replying, and 4 other banks ranked it second. Next in order was the liquidity of the borrower, which was ranked first by 6 banks but given second place by 29. Earnings coverage of interest requirements was ranked first by 2 banks, and other liabilities of the borrower by 1 institution.

Quality of Major Classes of Loans

Statistical indicators are available of the over-all quality of the classes of bank loans that have undergone major expansion during the post-war period. These indicators do not measure the quality of individual loans, needless to say, but they are of significance in assaying the quality of classes of loans, particularly for comparisons with earlier periods.

The over-all quality of business loans, which accounted for 33% of the total increase in commercial bank loans between 1945 and 1959, is indicated by the ratio of interest payments of business corporations to their earnings available to pay interest. Interest payments of all nonfinancial corporations absorbed approximately 14% of corporate earnings before interest and taxes in 1959, as compared with over 23% in 1939 and almost 28% in 1929. While corporate interest payments have increased in the postwar period with the expansion of business borrowing, earnings coverage of interest payments has been much greater than it was in the prewar era, as Chart V demonstrates.

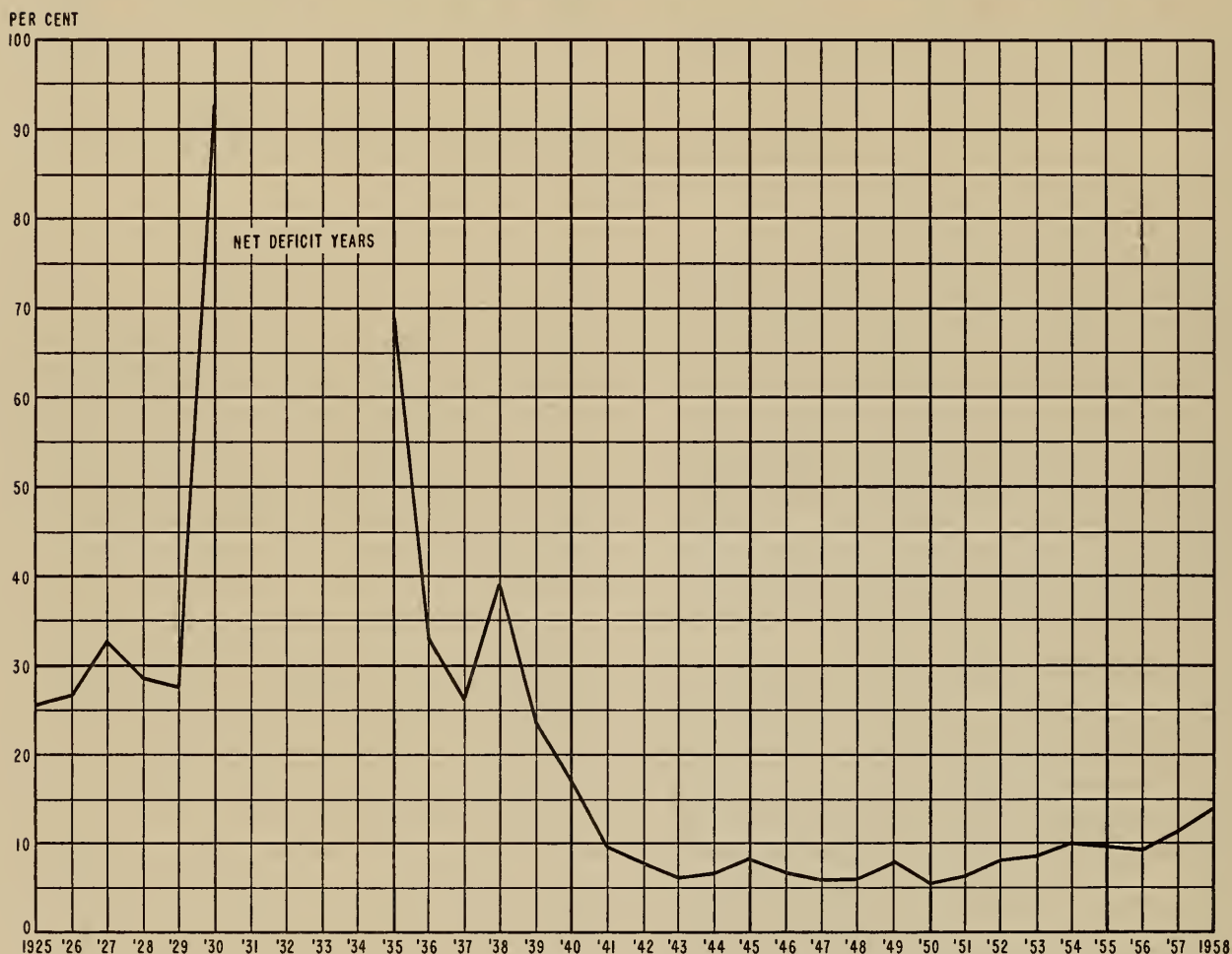
In terms of cash flow, the over-all quality of corporate debt is much higher than earnings coverage of interest requirements would indicate. Corporate depreciation allowances aggregated \$21.5 billion in 1959, five times as large as they

were in 1939. In 1959, depreciation allowances were almost as large as the entire net income of all corporations, and considerably exceeded net income in many enterprises. The cash flow from depreciation deductions provides an additional

source of funds for debt payments, particularly where spending for new assets falls substantially short of depreciation allowances, or where such spending can be readily reduced by the borrower when conditions turn less favorable.

CHART V.

INTEREST PAYMENTS AS A PERCENTAGE OF INCOME AVAILABLE FOR INTEREST, ALL NONFINANCIAL CORPORATIONS, 1925-1958



SOURCE: U. S. Treasury Department, Internal Revenue Service, Statistics of Income—Part 2.

Mortgage Debt Quality

Mortgage loans, chiefly residential, were responsible for 27% of the total increase in bank loans from 1945 to 1959. A basic indicator of their over-all quality is the ratio of home mortgage debt to disposable personal income, the source of funds for servicing such debt.

Between 1941 and 1959, the amount of 1-4 family home mortgage debt outstanding increased from 20 to 39% of the year's disposable personal income. The significance of this comparison is affected by the following factors:

1. The great increase in home ownership. The proportion of dwellings that are owner-occupied

rose from 43% in 1940 to over 60% in 1959. Millions of families have substituted monthly mortgage service payments for rents.

2. A considerably larger proportion of owned homes are mortgaged.

3. The lengthening of mortgage maturities has made repayment much less burdensome to borrowers, but the volume of mortgage debt outstanding has been greatly expanded in consequence.

4. Universal adoption of the amortized mortgage provides for orderly repayment of the debt out of the owner's income as the property depreciates.

5. The larger part of home mortgage debt is owed by families with higher than average incomes, the *Survey of Consumer Finances* of the Board of Governors of the Federal Reserve System has indicated.

Interest and amortization payments on home mortgages absorbed less than 4% of aggregate disposable personal income in 1959.

Mortgage portfolios of commercial banks are of higher than average quality, both because of greater selectivity in making such loans and because 46% of the residential mortgages held at the end of 1959 were insured by the Federal Housing Administration or guaranteed by the Veterans Administration.

The Quality of Consumer Loans

Consumer loans, apart from loans to sales finance and consumer finance companies, accounted for a fifth of the increase in loans of commercial banks between 1945 and 1959. The over-all quality of consumer loans is indicated by the ratio of debt repayments to disposable personal income and to liquid asset holdings of individuals.

The ratio of consumer instalment credit repayments to disposable personal income was 9% at the outset of World War II. It increased to 12.9% in 1959. In interpreting this increase, the much larger proportion of the population using

consumer credit must be considered. *The Survey of Consumer Finances* found that 60% of the nation's spending units used consumer credit in 1959, but only 33% in 1949. Moreover, durable goods account for a larger proportion of consumer expenditures than before World War II, and consumer credit is used to a larger extent in financing some other classes of spending. Many more consumers are using credit for many more purposes than ever before.

Because consumer loans are of intermediate term with monthly repayments the rule, liquid asset holdings of borrowers are a significant quality factor. The *1959 Survey of Consumer Finances* found that over 70% of spending units with personal debt possessed liquid assets, and in more than half these cases the liquid assets owned exceeded the personal debts due. Liquid assets, as defined by the *Survey*, include only checking and savings accounts, shares in savings and loan associations and credit unions. Other securities owned are not included.

Another factor affecting the quality of both home mortgage and consumer debt has been the expansion of the financial asset holdings of consumers, including securities and savings in life insurance companies and pension funds. Financial assets of consumer and nonprofit organizations increased from \$365 billion in 1945 to \$924 billion at the end of 1959, the Flow-of-Funds and Saving data compiled by the Board of Governors of the Federal Reserve System indicate. Thus, while consumers' liabilities increased by \$165 billion between 1945 and 1959, their financial assets increased by \$559 billion.

Available statistics support a conclusion that business, real estate and consumer debt outstanding has strong over-all income and cash flow coverage by comparison with that of earlier periods, and has further protection from liquid asset holdings of borrowers, despite the great expansion in the volume of such debt since 1945. In the case of business and mortgage debt, quality has been strengthened in essential respects by comparison with the pre-World War II era. The greatly increased use of consumer debt has substantially in-

creased the ratio of such debt to disposable personal income, but this increase must be interpreted with caution because of the basic change in consumer credit's role in the economy.

Moreover, loans of commercial banks are well above the average in quality of each loan category because of the selection standards applied by bank managements and supervisory authorities, as compared with those of some other classes of lenders.

Quality of Investments

Tax-exempt securities accounted for over a fifth of the investments of commercial banks at the end of 1959, as compared with only 4% in 1945.

Interest payments on general obligations of State and local governments in 1959 totaled \$1,537 million, or 3.1% of the \$49.3 billion of revenues reported in that year. This low ratio of interest payments to revenues indicates a high over-all quality of such debt, despite the record volume of new offerings in the post-war era. Moreover, commercial banks select municipal issues with relatively high ratings and shorter maturities for their portfolios.

Commercial banks have not added to their holdings of corporate bonds in the post-war period. Tax-exempt issues have been more attractive because vigorous demand for corporate obligations from life insurance companies and pension funds that pay little or no income tax on investment income has reduced yields on corporate bonds. Another factor has been the advantages of term loans over publicly offered corporate bonds to commercial banks because of the benefits they derive from direct relations with borrowers. Life insurance companies also have found it advantageous to negotiate directly with borrowers, and now acquire the great bulk of their corporate bonds through direct placements. In 1959, over 97% of the corporate bonds acquired by the larger life insurance companies were direct placements.

Commercial bank holdings of securities other than U. S. Government, State and local obligations showed little change in the post-war period, and

were only 4.4% of total investments at the end of 1959. A large part of these securities consisted of non-guaranteed Federal agency obligations, foreign bonds and Federal Reserve bank and other stock holdings. By contrast, corporate bonds accounted for over 30% of all investments of member banks on June 29, 1929, and at that time were almost three times as large as the banks' holdings of State and local obligations. Foreign obligations accounted for an additional 6% of member bank investments in 1929, about half of them issues of foreign corporations.

The post-World War II shifts in bank investments, therefore, have differed markedly from those which followed World War I, when corporate and foreign bonds came to account for over a third of all investments.

Economic Stability and the Quality of Assets

Severe business depressions, past experience has shown, can weaken the quality of many bank loans and swell the volume of delinquencies and defaults.

Under the Employment Act of 1946, the Federal Government has assumed full responsibility for safeguarding the stability of the economy. Both political parties favor aggressive use of monetary, fiscal and other measures to sustain the economy in times of recession so as to prevent a recurrence of major depressions and deflation.

To the extent that the policy of restraining booms and combatting recessions contributes to the stability of the economy, it will be a major factor of strength affecting the quality of bank assets.

Conclusions

Developments that have greatly strengthened the quality of bank assets as compared with the 1920's have been:

1. Increased reliance on earnings and cash flow of the borrower, rather than the self-liquidating character of isolated transactions and assets, to safeguard the quality of loans.
2. Large liquid asset holdings of major classes of borrowers.

3. Security investments are virtually limited to U. S. Government, State and municipal obligations, whereas over a third consisted of corporate and foreign bonds in 1929.

4. Measures taken to strengthen the structure of the economy and to prevent major depressions.

IV How Liquidity Has Been Affected

The persistent increase in loans since the end of World War II has caused a sharp reduction in the liquidity of commercial banks as it is conventionally measured. Cash and Government securities held by all commercial banks equalled 83% of their deposits in 1945 and 49% at the end of 1959. In 1945, moreover, prices of Government securities were being pegged by the Federal Reserve banks, so that they were virtually equivalent to cash. In 1959, only short-term issues could be so considered because restoration of a free market made intermediate and longer-term obligations subject to price declines in the free market when interest rates rose.

However, very little significance attaches to the fact that the liquidity of commercial banks has declined since 1945 because conditions prevailing at that time were quite abnormal. Not only commercial banks but businesses and individuals as well possessed overwhelmingly redundant liquidity at the end of World War II, due to the more than fourfold expansion of the public debt and the doubling of the money supply during the war years. The excess liquidity then generated was bound to be put to use in a peacetime economy. Commercial banks utilized their excess liquidity to expand loans, just as businesses and individuals used it to acquire assets and goods they wanted.

Comparisons of present-day liquidity ratios of commercial banks with those of the 1930's or earlier decades also have little value. In the 1930's the demand for credit was sharply reduced by depression conditions, so that excess liquidity developed in the banks once the drastic deflation of

By conventional standards, a decline in the proportion of U.S. Government securities and an increase in the proportion of loans increases the risk element in bank assets. But the statistical evidence indicates that the over-all quality of assets remains high following these changes in the composition of bank assets.

1930-33 had been surmounted. Before the 1930's call loans and commercial paper rather than Government securities were the chief liquidity media of commercial banks, and the ratio of cash and Government obligations to deposits measured only a part of their liquidity.

To appraise the adequacy of commercial bank liquidity following the major shifts that have occurred in the composition of bank assets since World War II, it is necessary to go beyond superficial comparisons of conventional ratios such as the ratio of cash and Government securities to deposits. Liquidity needs must be estimated realistically and all available sources of liquidity must be taken into account in judging whether they are adequate for these needs.

Liquidity Needs

Commercial banks require liquidity to meet net deposit withdrawals and increases in demands for loans.

In estimating how much liquidity commercial banks need for meeting net losses of deposits, the possibility that a sharp contraction in the total volume of deposits may recur must first be weighed. When this last occurred between 1929 and 1933, deposits in commercial banks declined by \$17.6 billion or 38%. A wide margin of liquidity would be required if such a decline in total deposits were a possibility for the future.

A number of measures have been adopted to prevent a deflation of the volume of bank deposits

in the future. Monetary and fiscal policies are aimed at preventing a material shrinkage of the money supply. In periods of recession, banks are provided with net free reserves and their purchases of Government securities will offset any contraction of loans, so that the volume of deposits will be sustained or increased. The danger of deposit withdrawals because of loss of confidence in banks has been largely eliminated by deposit insurance, limited chartering of new banks and other steps to strengthen the banking structure.

In any event, greatly liberalized and broadened access to Federal Reserve credit in case of need assures adequate liquidity to the commercial banking system in future emergencies, and so makes a recurrence of a bank liquidity crisis like that of the early 1930's unthinkable.

Deposits of individual banks may undergo wide fluctuations, however, even though the total volume of deposits of the commercial banking system displays a high degree of stability. Volatility of deposits varies with the type of deposit, the class of owner and the size of individual accounts. The trend of a bank's deposits may be sensitive also to seasonal and cyclical influences, to the rate of growth of the area served and to competitive conditions.

Bank managements have given a great deal of study to the behavior of their deposits, and techniques have been developed for estimating liquidity needs of individual banks.

One approach is to estimate the minimum liquidity requirement for each class of deposits from fluctuations over a period of time in the past. Deposits in each class above a "base level", "hard core" or "minimum" indicated by past experience are designated the "volatile" portion, and liquid assets are held against it. Once liquidity has been provided for the volatile portion of each deposit classification, relatively little liquidity is considered necessary for the "hard core" itself. Allowance can be made for increasing or decreasing the base level for each class of deposits where a clearly

rising or falling trend manifests itself for such deposits.¹

Another approach is to give less weight to past deposit behavior but to make periodic projections of expected future deposit fluctuations in the light of all known factors. Where a limited number of accounts constitute a substantial part of a bank's deposits, contacts with depositors facilitate forecasting of the trend of the deposits.

A survey of members of the Association of Reserve City Bankers showed that 50 of 59 replying banks chart the trend of deposits to help project future trends, and 3 banks use tables of deposit data for this purpose. A large proportion of the banks regularly project expected fluctuations for the several classes of deposits, in a number of instances for a quarterly or longer period, and then adjust the projections as actual experience during the period dictates.

With the whittling down of the redundant liquidity that commercial banks inherited from the war period, refinement of techniques for estimating liquidity needs to meet net deposit withdrawals has become essential.

Liquidity for Increases in Loan Demands

Liquidity needed for increases in loan demands will depend in the main upon future borrowing needs of customers and a bank's willingness to meet new loan demands as they develop. When loans are at a seasonal or cyclical low ebb, a large margin of added liquidity is required for the seasonal or cyclical upturn in borrowing that will follow.

Between 1945 and 1959, as Chart IV on page 13 showed, economic growth generated so strong a demand for bank loans that recessions caused only brief interruptions in the rise, which quickly regained its pace with business recovery. Under such conditions, a high degree of liquidity is required for increases in loan demands, so long as a bank's management is ready to lift its loan ratio.

Federal Reserve credit policy will have a major bearing on liquidity needs for expanding loans.

¹ For a good example of this approach, see *A Report of the Committee on Asset Allocation*, New York State Bankers Association, 1960.

When the commercial banking system is provided with net free reserves, it can expand loans by creating new deposits, so that liquidation of investments is not necessary for this purpose. However, banks cannot count upon maintenance of an easy money policy to help meet an expansion of loans, particularly since a vigorous rise in bank lending itself invites adoption of a restrictive credit policy. Hence, liquidity is required for the purpose if a bank wants to assure its ability to expand loans as demands develop.

Loan Repayments and New Loans

One source of funds for making new loans is the funds received by a bank in repayment of its outstanding loans. Receipts from this source reduce the need for liquidating other assets to enable the bank to meet an increased loan demand from its customers.

The Federal Reserve Bank of New York has raised the question whether "the conversion of a large proportion of business loans into term loans by the commercial banking system as a whole may 'freeze' these funds for prolonged periods of time and thereby deprive other borrowers, who may possess no other sources of credit than their banks, of access to short-term funds".² In January, 1961, when the Federal Reserve Bank of New York began weekly publication of term loan statistics of the 10 largest New York City banks to draw attention to this factor, 57% of the business loans of these banks had an original maturity of more than one year. At other member banks, the proportion of term loans was about one third.

Because a large proportion of business loans with short maturities are repeatedly renewed at maturity, it is very difficult to judge how far a large proportion of term loans lessens the ability of a bank to meet new loan needs of customers as they arise. The article cited in the *Monthly Bulletin* of the Federal Reserve Bank of New York stated:

As is generally known, many short-term loans are in effect term loans because they are more or

less routinely renewed whenever they come to maturity.

Analyzing the reasons for the rise in the proportion of term loans at New York City banks, the Federal Reserve Bank further stated:

Some short-term loans that were actually "continuous" loans, in practice renewed routinely at maturity, may have been converted into formal term loans.

A portfolio of loans with maturities of more than one year that provides a stream of amortization payments to the lending bank furnishes funds for making new short-term advances should demands for the latter expand. When amortization payments are assured because they are amply covered by income or cash flow of the borrowers, they can prove to be a more reliable source of new loanable funds than short-term loans that the lending bank feels it must renew repeatedly.

Turnover of a bank's loans as shown by actual repayment ratios over a period of time is a much more reliable measure of the volume of new loanable funds provided by loan repayments than the nominal maturity schedule of a loan portfolio.

Sources of Liquidity

Liquidity is provided a bank by its free cash and by other assets that can be turned into cash at all times without material loss.

Cash that is part of legally required reserves is not available to pay off deposit liabilities or to expand loans, except to the small extent that deposits can be paid off with the legal reserves held against them. Similarly, a bank may not consider as free for other use compensating balances maintained with correspondents for services rendered.

Other classes of assets can be turned into cash through payment at maturity or on call, through sale in the market or through use as the basis for borrowing.

Assets with very short maturities that are certain to be paid off, such as Treasury bills and open market commercial paper, and amply secured call loans that a bank will not hesitate to call in should

² "Term Lending by New York City Banks", *Monthly Review*, Federal Reserve Bank of New York, February, 1961, Pages 27-31.

it need funds are prime liquidity sources. Maturing business loans may not be equally reliable as a liquidity source even when they are of highest quality, since refusal to renew such loans when requested to do so by good customers with a strong credit standing could lead to loss of the accounts.

Marketable Government and other gilt-edge securities maturing within a year or so are reliable sources of liquidity because they can be sold in the open market with little loss, if any. The longer the maturity of a marketable obligation the greater the decline in price that could occur with a rise in interest rates. Through staggering of maturities in investment portfolios, through lengthening maturities in periods of relatively high interest rates and shortening them when rates decline, and through developing skill in forecasting the trend of interest rates, bank investment officers have sought to increase the returns derived from the security portfolio while retaining its liquidity function.

Since liquidity is most likely to be needed to expand loans in periods of prosperity and rising interest rates, however, longer-term obligations cannot be considered assured sources of liquidity. Marketable U. S. Government and other prime securities of intermediate and longer-term are "quasi-liquid" assets, since they can be turned into cash at any time but at prices that could involve loss to the bank in periods of high interest rates, even if these issues were acquired at what seemed advantageous yields when purchased.

As loans have become a much larger proportion of bank assets and as a growing proportion of investments have consisted of tax-exempt bonds, the Government security portfolio has come to be regarded increasingly as a source of liquidity rather than of earnings for commercial banks. This has resulted in a reduction in commercial bank holdings of Treasury issues maturing in more than 5 years from \$26.8 billion at the end of 1945 to only \$7.5 billion at the end of 1959.

Liquidity and Pledged Securities for Public Deposits

As commercial bank holdings of U. S. Government securities were reduced during the post-

World War II period, a growing proportion were being pledged as security for public deposits. Federal and the majority of state laws require the pledge of securities for public deposits. Assets pledged by insured commercial banks aggregated \$27 billion at the end of 1959, which was equal to almost half their total Government security holdings of \$58.4 billion. At the end of 1949, pledged securities were equal to only a little over a fifth of U. S. Government obligations held by insured commercial banks. About half the U. S. Government security portfolios of New York City banks were being pledged for this purpose in 1960.

When investments are held mainly to provide liquidity, it is awkward to have a large proportion pledged to secure deposits, so that they have to be recovered by substituting other securities if they are sold to obtain needed funds. The efficiency of such investments as liquidity media is thereby lessened.

Statutes requiring the pledge of securities to secure particular deposits are an anachronism. The pledge of securities is designed to give a preferred position to such creditors in the event of a bank's suspension. The many safeguards that have been adopted to strengthen the banking system and prevent failures make such preferences obsolete.

Borrowing and Liquidity

Assets can be turned into cash through their use in borrowing, as well as through maturity or sale. The extent to which the commercial banking system as a whole resorts to borrowing reflects Federal Reserve open market operations, which determine whether and to what extent member banks have an excess or a deficiency of reserve balances. But borrowing by each bank will reflect its individual deposit experience and its lending and investing decisions. And borrowing becomes a much more important source of liquidity for a bank when its margin of excess liquidity assets narrows, as has been the case generally during the post-World War II period.

The conditions that govern borrowing by member banks from the Federal Reserve banks have undergone major changes since the Federal Re-

serve System was established in 1913. The original Federal Reserve Act limited member bank borrowing from the Federal Reserve banks to the discounting of eligible paper as narrowly defined in the law. As the composition of bank assets changed and eligible paper became a smaller proportion of total assets, access to the Federal Reserve banks was broadened to a limited extent. Member banks borrow mainly through advances on their own notes secured by U. S. Government obligations. They also may borrow, at a higher rate, through advances secured by any collateral acceptable to the Federal Reserve banks.

Borrowing has two functions as a source of bank liquidity. First, it permits more flexible use of the liquidity assets owned by a bank, as when short-term Treasury issues are pledged by a bank as security for an advance instead of being sold. Secondly, it provides additional liquidity to the bank when the assets used for borrowing are not suitable liquidity media in themselves.

As Government security portfolios become their chief source of liquidity, commercial banks may prefer to keep such holdings free of encumbrance so they can be sold if desired. Borrowing will provide additional liquidity only if it takes the form of discounting of eligible paper or advances against all classes of assets without penalty.

Eligible paper is still narrowly defined by the Federal Reserve Act and Regulation A of the Board of Governors to exclude the larger part of commercial bank loan portfolios. These definitions were originally adopted as a form of qualitative credit control to discourage member banks from making non-eligible loans. This attempt at indirect qualitative control over bank lending proved quite ineffective in influencing the character of bank loans and is inconsistent with the prevailing view that credit control should be primarily quantitative in character.

The great expansion of consumer and term loans of member banks in recent years calls for a redefinition of eligible paper to widen access of member banks to borrowing from the Federal Reserve banks in accordance with changes in their assets. Such broadening of eligibility could become of practical value as holdings of U. S. Gov-

ernment securities decline, and especially if a larger proportion of such holdings is pledged to secure deposits.

Borrowing as a source of liquidity is limited and conditional at best, by comparison with that provided by maturity or sale of assets. Member banks are expected to borrow from the Federal Reserve banks on a short-term basis as a rule. Regulation A of the Board of Governors states:

Under ordinary conditions, the continuous use of Federal Reserve credit by a member bank over a considerable period of time is not regarded as appropriate.

Vigorous growth of the economy, the experience of the post-World War II period shows, leads to an increase in the proportion of loans and a decline in the proportion of Government securities in bank portfolios, while credit restraint by the Federal Reserve System increases the need for member bank borrowing from the Federal Reserve banks. If the commercial banking system is to be in position to serve future increases in loan demands, freer access to borrowing as a source of liquidity for member banks may be required. The restrictions imposed by Regulation A could prove a serious handicap in the use of this expedient. This is all the more true because of the limited experience of the Federal Reserve and member banks' staffs with discounting procedure during the past generation. Member bank borrowing was negligible during almost the whole of the period from 1933 to 1952.

Cash Flow and Liquidity

Liquidity measures the ability of a bank to meet net deposit withdrawals or to expand loans on a given day. This ability will vary with the passage of time as funds are received and disbursed by the bank. An excess of cash receipts or of disbursements will increase or reduce liquidity. As a growing proportion of bank assets has come to consist of loans subject to regular amortization, the question arises whether the cash flow from periodic repayments of loans can be looked upon as an added source of liquidity.

It is the essence of liquidity that it assures a bank of immediate access to cash for deposit

losses or increased customer borrowings. Amortization receipts or loan maturities over a period of months do not provide cash for immediate use. Rather, they provide a source for replenishing liquidity in the future. Amortization receipts also facilitate borrowing by providing funds to repay loans incurred to expand liquidity. Along with investments that will become a liquidity source with the passage of time as they approach their maturity dates, scheduled amortization receipts are a potential but not a current liquidity resource.

But a cash flow projection is of great value because it helps a bank to view its liquidity needs and resources in depth. Liquidity is designed to enable a bank to meet demands that may be made upon it by depositors and borrowers at any time. The more uncertain the magnitude of such demands, the greater the liquidity needed. To the extent that a cash flow projection lessens uncertainty about the size of future demands that will be made upon the bank and the resources that will be available to meet them, it reduces the liquidity required by the bank to be ready for all contingencies.

Projections of cash receipts and payments over a period of time help both to estimate liquidity needs and to plan for its replenishment, and so is a valuable feature of liquidity management.

Measuring Bank Liquidity

An inclusive measure of commercial bank liquidity would include the following assets:

Cash in excess of legally required reserves and compensating balances with correspondents.

U. S. Government and other prime marketable securities maturing within one year.

Open market commercial paper and acceptances.

Call loans on securities.

At the end of 1959, all commercial banks had deposits of \$220 billion. Cash assets, comprising vault cash, legal reserves and other due from banks, and cash items in process of collection, aggregated \$49.5 billion and U. S. Government securities maturing within one year \$12.5 billion. If it is assumed that half the cash was required for legal reserves and minimum compensating balances, free cash and U. S. Government securities maturing within one year equalled 17% of deposits. If \$32.5 billion of 1-5 year Governments were included, the ratio would have been 32%.

Data are not available to permit computation of an inclusive liquidity ratio for the commercial banking system. With commercial paper, call loans and other prime short-term securities included, along with U. S. Government issues with maturities up to 5 years, the ratio would have been in the neighborhood of 40% of deposits at the end of 1959. This did not include borrowing as a supplementary source of liquidity.

These ratios indicate that the banking system retains a high degree of liquidity by objective standards. *However, as growth of the economy expands the demand for loans, liquidity could well become the chief limiting factor on the willingness of banks to permit the proportion of loans to total assets to rise further.*

V Asset Distribution Changes and Capital Adequacy

The chief function of the capital funds of commercial banks, from the viewpoint of depositors and supervisory authorities, is to provide a cushion to absorb possible future losses on assets.

Changes in the composition of bank assets affect capital adequacy when they increase the risk of loss. U. S. Government obligations have been described as "nonrisk" assets because pay-

ment at maturity is regarded as certain, although sale before maturity may involve considerable loss due to price depreciation in the event of a rise in interest rates. The contraction of Government security holdings and expansion of loans during the post-World War II period, to the extent that it has added to the risk incurred in their portfolios, has increased capital requirements of commercial banks.

Measurement of Capital Adequacy

One commonly used measure of bank capital adequacy is the ratio of capital funds to deposits less cash and U. S. Government securities, sometimes called the “capital to deposits at risk” ratio. This ratio ignores the risk that Government securities may be sold at a loss, and assumes that risk attaches to all other classes of assets acquired with a bank’s deposits. At best, therefore, the ratio provides a very rough yardstick for comparing bank capital adequacy on different dates.

At the end of 1945, the ratio of capital funds to deposits at risk of all commercial banks was 36%. Despite a more than doubling of bank capital funds between 1945 and 1959, the ratio had declined to less than 18% by the end of 1959 because of the shifts in the proportions of Government securities and loans during the interim.

The ratio of capital funds to deposits less cash and U. S. Government securities requires refinement in the following particulars:

1. Capital funds of commercial banks at the end of 1959 were supplemented by \$2.2 billion of valuation reserves for losses on loans. These reserves, like capital funds, provide a cushion for absorbing losses on loans. The Treasury authorized the accumulation of a reserve for losses on loans out of taxable income in December, 1947. Before that date, loan loss reserves were quite small. Inclusive of these loan valuation reserves, the ratio of capital funds to deposits less cash and U. S. Government securities would have been nearly 20% at the end of 1959.

Practice differs among banks as regards inclusion of the reserves for losses on loans in measuring capital adequacy. Of 65 members of the Association of Reserve City Bankers, 37 or more than half include the reserve in measuring the adequacy of their capital funds. Several of the replying banks also include unallocated security and contingency reserves.

The efficacy of capital funds as a cushion for absorbing losses on assets is not affected by allocation of a portion of such funds to the absorption

of possible losses on particular classes of assets. Loan loss reserves should be added to capital funds, therefore, in appraising the adequacy of capital in relation to asset risks assumed.

Security valuation reserves are not comparable since declines in security prices may at any time make such reserves inadequate to absorb realized losses on investments, should sales become necessary or desirable.

2. Commercial banks held \$9.3 billion of FHA insured and VA guaranteed mortgages at the end of 1959. If these Federally-underwritten mortgages were included with U. S. Government securities as “nonrisk” assets, the ratio of capital funds and loan valuation reserves to deposits less cash and U. S. Government obligations would have exceeded 21%.

3. Capital funds of individual banks may be understated because certain assets, such as real estate and stocks acquired through defaults of loans or otherwise, are carried at relatively low or nominal values.

Quality and Liquidity of Assets

The adequacy of bank capital and reserves is determined by the quality and liquidity of bank assets far more than by any specific capital funds ratio. At the end of 1929, the ratio of capital funds to deposits less cash and U. S. Government securities of all commercial banks was 24%, but this relatively high ratio did not prevent difficulties due to subsequent heavy credit losses and sales of investments at depreciated prices to raise needed cash.

The quality of bank assets has been strengthened by the measures taken to safeguard the stability of the economy and the price level and by the emphasis now placed on earnings and cash flow in making loans, as discussed in Section III above.

Liquidity has a major bearing upon the adequacy of bank capital. It determines whether intermediate-and longer-term securities may have to be sold at a loss to raise funds to meet deposit losses

or demands for loans. Moreover, the quality of some loans may be affected adversely if the lending bank is under pressure to demand prompt payment because it needs cash. The tendency to shorten maturities in bank investment portfolios lessens the risk of loss from both these causes.

While a strong liquidity position lessens the likelihood that losses will have to be incurred through sale of depreciated investments to raise needed cash, it cannot take the place of adequate capital funds and reserves when substantial credit losses are sustained on earning assets.

Supervisory authorities have sought to refine the measurement of capital adequacy by setting up varying capital requirements based on both quality and liquidity of assets. The Board of Governors of the Federal Reserve System has devised a classification of assets into eight groups, with capital requirements based on the credit and market depreciation risks of each group. If primary and secondary reserve assets do not equal specified liquidity ratios for the several classes of deposits, an additional capital requirement is imposed for possible losses from liquidation of other assets that may have to be sold to provide needed cash to meet net deposit withdrawals.

Diversification and Capital Funds

The capital fund requirements of a bank are also affected, as a practical matter, by the degree of diversification of its assets and deposit liabilities.

Asset diversification tends to lessen over-all risk because developments which affect particular loans adversely involve only a limited proportion of the total assets of the bank. Similarly, deposit diversification lessens the possibility that a reduction in the bank's total deposits will be large enough to impair liquidity and so make necessary the liquidation of securities that may have depreciated in price.

Commercial banks possess a much higher degree of diversification of both assets and liabilities than do other classes of financial institutions.

Developments of the post-war period have tended to increase diversification in both respects.

Asset Composition and Capital Leverage

The composition of assets affects capital adequacy not only through its effect on the risk element in the portfolio, but also by the effects on earnings, additions to capital funds and the degree of leverage required to achieve a reasonable rate of return on the bank's capital funds.

The average income on loans of all insured commercial banks in the five years 1955-1959 was 5.30%. This compared with average income of 2.44% on U. S. Government securities. The additional earnings provided by the sharp rise in the proportion of loans to earning assets have helped commercial banks to cope with rising expenses, to make substantial additions to capital funds and reserves from retained earnings, and in many instances to raise capital through the sale of stock.

When commercial banks earn a low over-all rate of return on earning assets, they depend on the leverage of a low ratio of capital to earning assets to realize even a moderate rate of return on their capital funds. But when the rate of return on earning assets is increased by stepping up the proportion of loans, commercial banks become less dependent on the leverage of a low capital ratio to attain a satisfactory rate of return on capital funds. Chart VI shows how the rise in the rate of gross operating earnings to total assets of insured commercial banks between 1945 and 1959 has been accompanied by a steady increase in the ratio of capital funds to total assets as banks became less dependent upon the leverage of a low capital ratio to maintain the rate of return earned on capital funds, and as they felt the need for additional capital because of a rise in the proportion of "risk assets".

The higher earnings provided by the changes in the distribution of bank assets since World War II have thus facilitated the building up of the capital funds of commercial banks to a higher ratio in relation to total assets, although not to deposits less cash and U. S. Government obligations. It can be assumed, therefore, that added earnings from any further rise in the ratio of loans to earn-

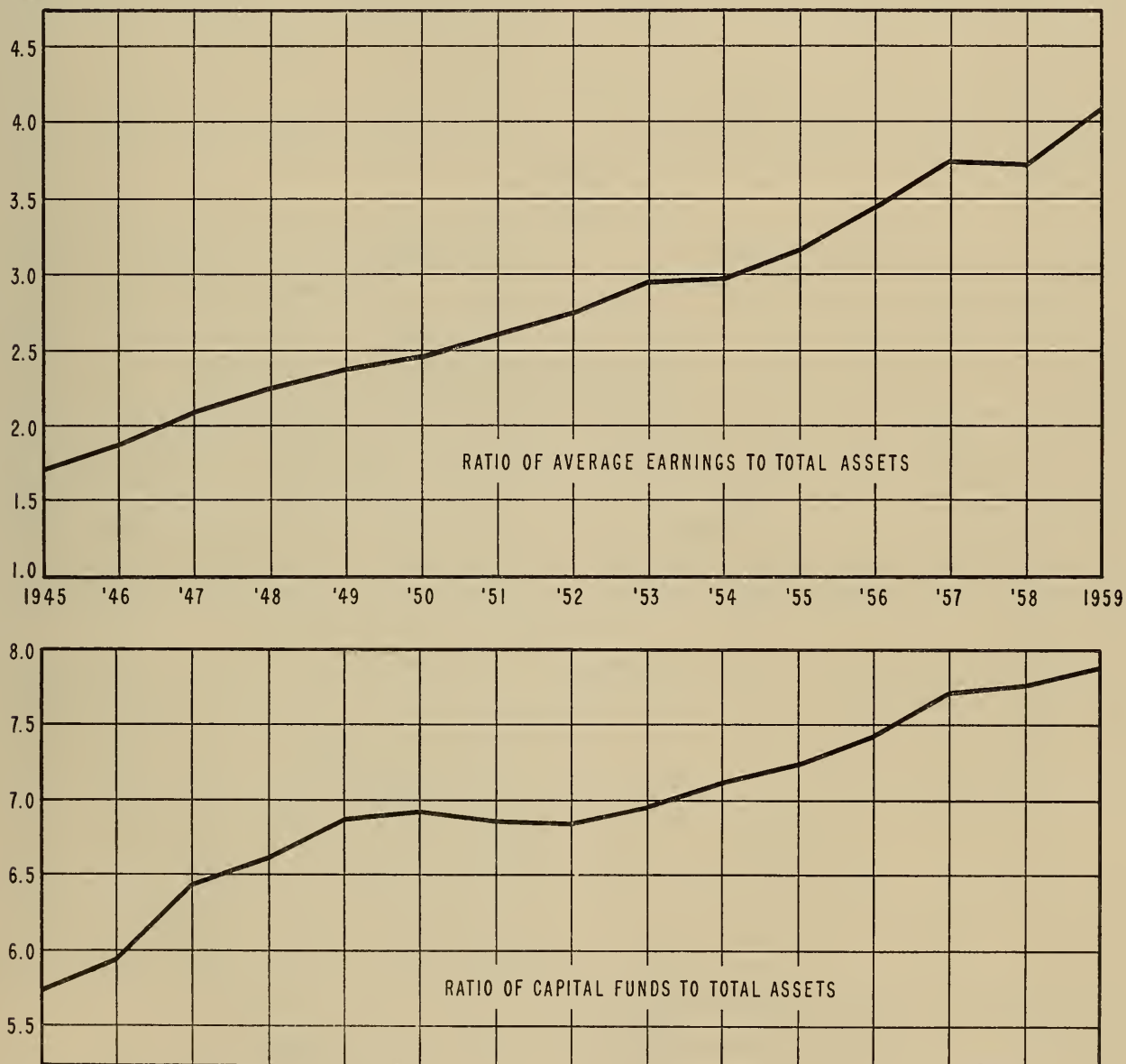
ing assets will facilitate continued expansion of capital funds, so that capital adequacy will not be the limiting factor on loan expansion.

The impact of asset composition changes on commercial bank earnings will be explored further in the following section.

CHART VI.

RATIOS OF GROSS OPERATING EARNINGS AND CAPITAL FUNDS TO TOTAL ASSETS, INSURED COMMERCIAL BANKS

Per Cent



SOURCE: FDIC Annual Reports.

VI The Impact on Bank Earnings

Shifts in the composition of assets have had a major impact upon the earnings of commercial banks in the post-World War II period.

Operating expenses of the banks increased more than fourfold between 1945 and 1959 due to the sharp rise in wage and salary levels and prices of supplies, higher interest rates paid on time deposits and expansion of the volume of business done. Current operating expenses of insured commercial banks were \$4,741 million larger in 1959 than in 1945. In addition, income taxes were \$486 million larger and it was necessary to earn a return on \$10.6 billion of additional capital funds.

Sources of Increased Operating Earnings

Insured commercial bank gross operating earnings were \$7,187 million larger in 1959 than in 1945. This increase in operating earnings enabled the banks to cover increases in operating expenses, taxes, losses on securities and transfers to reserves, and to report a net return of 7.94% on greatly increased capital funds. In 1945, net profits were 10.87% on capital funds, but the difference in the rate of return was due in the main to the fact that substantial net profits were taken on securities in 1945, whereas net losses were realized in 1959.

The increase in operating earnings was caused by four factors. These were:

1. Expansion of earning assets.
2. Increased receipts from service charges, fees and miscellaneous sources.
3. Changes in the composition of bank earning assets.
4. A rise in the level of interest rates.

The extent to which each of these factors enabled the banks to keep pace with the sharp rise in expenses and taxes and to earn a return on added capital funds can be deduced from the combined condition and earning statements of the insured commercial banks.

The average earning assets of insured commercial banks were 65% larger during 1959 than in 1945. Hence, if all other factors had been unchanged, this growth in the volume of loans and investments would have increased interest earnings by 65% or \$1,307 million. Service charges, fees and miscellaneous income were \$1,060 million larger in 1959 than in 1945. These two factors together thus accounted for only a third of the increase in gross operating earnings.

Two-thirds of the rise in operating earnings resulted from the changes in the composition of bank assets and the rise in the level of interest rates.

The effect on earnings of the expansion in loans and contraction in U. S. Government security holdings of insured commercial banks can be measured, since operating revenues from each class of assets are reported separately. If the proportion of loans and securities in bank portfolios had been the same in 1959 as in 1945, operating earnings would have been \$1,850 million or 25% less in 1959. With loans providing an average return of 5.75% and U. S. Government securities 2.80% in 1959, the rise in the ratio of loans to earning assets from 21% to 59% between 1945 and 1959 was a major influence upon bank earnings.

The remaining \$2,970 million increase in operating earnings reflected higher rates of interest earned on both loans and investments in 1959 as compared with 1945. But a part of the increase in the average income on loans from 3.09% in 1945 to 5.75% in 1959 reflected a rise in the proportion of consumer and other loans carrying higher rates of interest. In the absence of statistics of earnings from the several classes of loans, it is not possible to measure the extent to which changes in the "loan mix" contributed to the rise in bank operating earnings.

Asset Mix and Bank Earnings

Changes in the "earning asset mix" of insured commercial banks that lifted their loan ratio from

21% to 59% of earning assets thus alone offset almost 40% of the rise in operating expenses between 1945 and 1959. Put another way, more than half of the rise in net operating earnings before taxes between those years was due to these changes in asset composition.

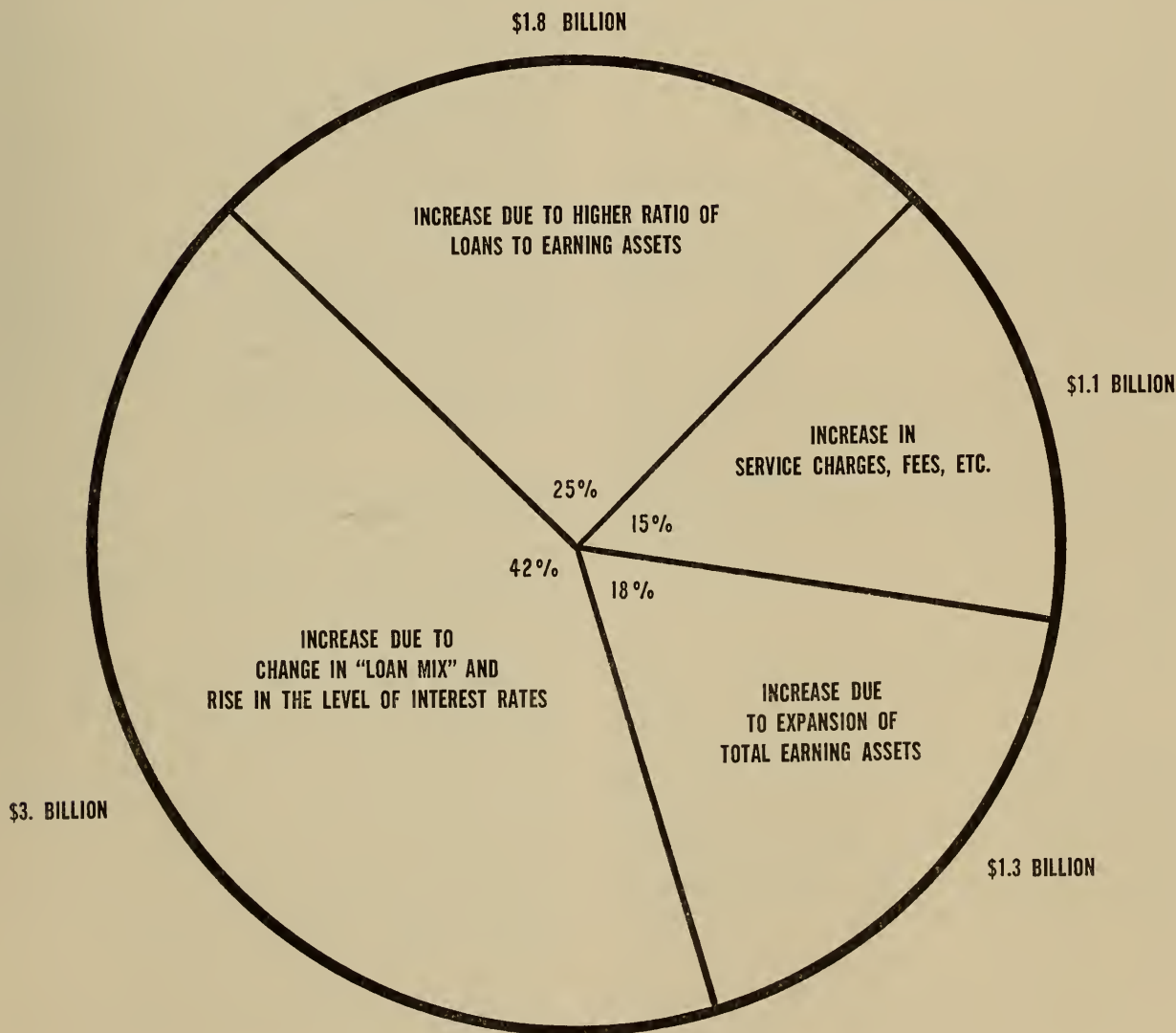
In addition, changes in the "loan mix" contributed to the rise in income from loans, and so accounted for a part of the \$2,970 million of added operating earnings that insured commercial

banks derived from higher average interest rates obtained from earning assets.

Changes in asset composition would cease to be a major source of added operating earnings for commercial banks, to offset increases in expenses and to provide a return on additions to capital funds, should the ratio of loans to earning assets approach a level that the banks regard as a desirable maximum. How much further loan ratios might rise is considered in the following section.

CHART VII.

SOURCES OF \$7.2 BILLION INCREASE IN GROSS OPERATING EARNINGS OF INSURED COMMERCIAL BANKS, 1959 OVER 1945



VII How Much Higher May Loan Ratios Rise?

A low ratio of loans and a high proportion of U. S. Government securities imparted a very high degree of flexibility to commercial bank portfolios at the end of World War II. This flexibility enabled the banks to fulfill a major role in financing post-war economic growth, despite repeated application of credit restraint during the 1950's and a sharp decline in their proportion of the gain in deposit-type savings.

Between 1945 and 1959, the commercial banks expanded loans by \$87 billion and holdings of State and local government obligations by \$13 billion. Commercial banking thus provided \$100 billion of additional funds to meet the credit needs of the economy, although the rise in their demand deposits was held down to only \$32 billion by restrictive credit measures and their savings and other time deposits increased by no more than \$37 billion during this period. The achievement was possible only because the banks shifted over \$30 billion from their U. S. Government security portfolios into loans and State and municipal obligations.

But the consequent rise in the loan ratio from 21% to 59% of earning assets has inevitably reduced the portfolio flexibility that commercial banks possess for meeting future increases in credit demands. The extent to which commercial bank managements would be willing to raise their loan ratios further will be considered in this section, after weighing the prospects for credit demands in the future.

The Future Demand for Bank Credit

The rate of economic growth will be the basic factor determining credit demands in the future, as it has been in the past. A population increase of almost 3,000,000 per annum, advancing technology and the urge to raise living standards assure economic growth, apart from Government and monetary measures that will be taken to foster it.

Private debt may not continue to expand at the very rapid average rate of almost 10% a year of

the 1945-59 period, when national income increased at an annual rate of 6%. Greater stability of costs and prices would tend to slow up the rise in debt. The increased flow of amortization payments on outstanding debt will have the same effect. In any event, the rise in debt is likely to be geared more closely to that of national income than was the case between 1945 and 1959, when the expansion of debt was catching up with the sharp rise in incomes that had taken place during the war years.

Loans of commercial banks expanded 11% a year, on the average, between 1945 and 1959. Even a materially slower rate of loan expansion in the future, however, could pose more difficult questions to banks managements than those hitherto encountered, since the ratio of loans to earning assets has risen from 21% to 59% since World War II.

Sharp as has been this rise in the loan ratio, it is still considerably below the 70-75% ratio that prevailed during the 1920's. Will commercial bank managements be willing to return to these or even higher loan ratios as credit demands expand with the growth of the economy?

Asset Management Policy

Bank asset management policies have been undergoing constant evolution in response to economic changes and experience.

Until a generation ago, the classic view was that commercial banks should hold only short-term self-liquidating and readily shiftable assets, so that their assets would correspond with liabilities that are payable on demand. A chief exception was the investment of a portion of savings deposits in real estate mortgages, and even this was questioned by some because savings deposits, as a practical matter, are paid out on demand.

The decline in the demand for business and security loans during the 1930's, the expansion of

consumer and home mortgage borrowing and the wide spread that developed between short-term and long-term interest rates at that time forced a reconsideration of the classical doctrines of bank asset management. On the one hand, it became apparent that adherence to accepted doctrines would limit the usefulness of banks to their communities and reduce their earnings. On the other hand, bankers knew that total deposits of their institutions displayed a high degree of stability, even though each depositor could withdraw his funds at will.

The view came to prevail, therefore, that once sufficient liquidity to meet net deposit losses was provided for, bank portfolios could comprise a substantial volume of assets that were neither self-liquidating nor readily shiftable by conventional standards. Since the volatility of the several types of deposits varies greatly, deposits were classified according to relative volatility and requisite liquidity was provided for each class. The management could then lend or invest the balance of each class of deposits in assets that need not be self-liquidating or readily shiftable in character, should these prove more desirable from the customer service and earnings viewpoints.

An Asset Allocation Program

This procedure was carried in some cases to the point where an ideal allocation of assets was projected for the several classes of deposits and for capital funds. Such an asset allocation program was designed to provide, for each portion of a bank's funds, a distribution of assets that would involve a suitable balancing of liquidity, quality, service to customer and income considerations. The actual composition of assets could then be compared with the ideal allocation to guide future lending and investing.

The defect in this earlier asset allocation approach was the implicit assumption that the demand for bank loans is relatively static, that unused lending capacity was ample for new loans that customers might seek, and that the balance of funds from each class of deposits not needed for

liquidity or desirable loans could be invested in relatively long-term investments to advantage. The very rapid expansion of the demand for loans that developed after World War II, however, showed that such a static approach to asset management was not realistic. There could be no one "ideal" allocation of assets to the several classes of deposits of a bank, since this would change constantly with credit demands, economic conditions and interest rate differentials. A bank that has made large purchases of longer-term bonds under such an asset allocation program would incur substantial losses when selling the bonds in a period of high interest rates to obtain funds to meet expanding loan demands from credit-worthy customers.

The Conversion of Funds Procedure

A dynamic approach is essential in commercial bank asset management, experience has shown. This is provided by the over-all "conversion of funds" procedure, which allocates the total funds of a bank to major classes of assets on the basis of relative priority.

A typical conversion of funds formula would allocate the bank's funds in the following order:

1. Bank buildings and fixtures, which are necessary but frozen assets, as shown by the condition statement.
2. The primary reserve, consisting of required reserves against deposits, compensating balances with correspondents and vault cash. This is also relatively inflexible in amount.
3. The secondary reserve, composed of assets convertible into cash at all times without risk of material loss. The secondary reserve is kept large enough to assure liquidity to meet net withdrawals of deposits and increases in loans for a limited period ahead. Analysis of deposit behavior and near-term loan requirements helps determine the size of the secondary reserve that is desirable for a bank.

4. The bank's loan portfolio, the distribution of which reflects credit demands of its customers, economic conditions, desired maturity distribution and interest rate differentials.

5. Marketable investments, which will vary in amount with changes in loan demands. Investments will tend to contract as loan demands expand, and to expand as loan demands shrink. Investments will thus provide a source of funds for expansion of loans over the recovery and prosperity phases of the business cycle and, to a degree, for long-run growth in the demand for loans.

The conversion of funds principle, modified to fit conditions in individual banks, recognizes that bank asset management must be flexible to fit changing credit demands, as well as fluctuations in the volume of deposits. Its application could justify loan ratios substantially higher than those now prevalent for many commercial banks.

Yardsticks for Asset Management

To learn how far bank managements would be willing to permit their loan ratios to rise when and as demands for loans expand, the views of members of the Association of Reserve City Bankers were surveyed.

A large majority of the banks participating in the survey use ratios in asset management. To the question, "Do you use ratios as a guide to asset management", 62 banks or 83% answered in the affirmative, and 13 or 17% answered "no".

The ratio most widely used is loans to deposits, which is employed by 89% of the banks using ratios. Because it is readily computed and compared, this ratio is in general use rather than that of loans to earning assets, a more logical yardstick for asset management. Since changes in the volume of deposits and of earning assets correspond closely, the loan to deposit ratio is a good indicator of earning asset distribution.

Ratios that a large number of banks utilize in asset management are:

Percentage of the Banks Using Ratios

Loans to deposits	89
Cash and U. S. Government securities to deposits	71
Capital funds to deposits at risk	50
Loans to total assets	42
Cash and Government securities to total assets	34

Individual banks employ such other ratios as loans to capital funds, municipal securities to deposits and real estate loans to time deposits.

Loans to Deposits Maximum

For all commercial banks, the ratio of loans to deposits at the end of 1959 was 50.4%. The ratio was higher for large city than for other banks, as the following comparison for member banks of the Federal Reserve System shows:

Class of Bank	Ratio of Loans to Deposits, End of 1959
Central reserve city member banks	57.6%
Reserve city member banks	52.5
Country member banks	46.7
All member banks	51.3

Members of the Association of Reserve City Bankers using this ratio in asset management were requested to indicate the maximum level that they consider acceptable. The replies ranged from 45 to 80%, with the largest banks favoring the highest ratios. The distribution of the replies follows:

Maximum Acceptable Ratio of Loans to Deposits	Number of Banks
45 - 49	3
50 - 54	11
55 - 59	5
60 - 64	21
65 - 69	9
70 - 74	5
75 - 79	1
	<hr/> 55

Almost three fourths of the respondent banks hold that the loan to deposit ratio should be less than 65%, and over a third hold that the ratio should be less than 60%. These maximum ratios provide limited scope for an increase in the loan to deposit ratio above the averages of 57.6% for central reserve city member banks and 52.5% for reserve city member banks at the end of 1959.

The range favored for other asset management ratios by a majority of the banks using them is:

Loans to total assets.....	46 - 55% maximum
Cash and Government securities to deposits	36 - 50% minimum
Cash and Government securities to total assets	36 - 45% minimum
Capital funds to deposits at risk	11 - 15% minimum

The range of acceptable ratios reflects differences in the character of the business of the re-

spondent banks, as well as management policy. A bank with a large volume of savings deposits that has been invested in considerable part in longer-term bonds is not likely to consider as high a loan ratio acceptable as banks in major financial centers that possess a high degree of liquidity in their security portfolios.

The conclusion indicated by this survey is that while the loan to deposit ratio is still materially below the maximum that many banks regard as acceptable, any future increase in the proportion of loans to deposits and to earning assets is bound to be moderate by comparison with the very sharp rise that occurred between 1945 and 1959.

Loan Ratios and Size of Bank

While loan ratios have increased in banks of every size class, ratios are substantially higher in large banks than in smaller institutions as a rule. This is shown by the following comparisons:

Loan Ratios of Insured Commercial Banks, 1959

Deposit Size Group	Ratio of Loans to Deposits	Total Assets	Proportion of Banks in Size Group Whose Loans Were 50% or More of Assets
Less than \$1,000,000	44.2%	39.0%	19.3%
\$ 1,000,000 - \$ 2,000,000	43.3	38.7	18.4
2,000,000 - 5,000,000	42.5	38.5	16.3
5,000,000 - 10,000,000	43.4	39.5	17.5
10,000,000 - 25,000,000	44.9	41.0	19.5
25,000,000 - 50,000,000	46.1	42.2	22.2
50,000,000 - 100,000,000	47.2	42.9	25.4
100,000,000 - 500,000,000	50.7	46.0	35.6
500,000,000 or more	56.8	50.4	52.0
All insured banks	50.5	45.5	18.4

Large banks as a group had a substantially higher ratio of loans to deposits and to total assets at the end of 1959 than did smaller institutions, the table shows. Moreover, a much greater proportion of the large banks had more than 50% of total funds in loans. The comparison indicates that a number of larger banks are relatively closer to what managements regard as a maximum desirable ratio of loans to deposits, so that their ability to expand loans by further shifts in assets is limited.

Larger banks also considered a higher maximum ratio of loans to deposits acceptable, the

survey of members of the Association of Reserve City Bankers indicated. By deposit size groups, the maximum loan to deposit ratio reported as acceptable averaged as follows:

Deposit Size Group	Average of Acceptable Maximum Loan to Deposit Ratios
Less than \$100 million	51%
\$100 - \$249 million	58
\$250 - \$499 million	60
\$500 - \$999 million	63
\$1 - 2.49 billion	62
\$2.5 - 4.99 billion	66
\$5 billion and over	77
Average for all banks replying....	61

Ratios for Classes of Loans

A number of banks also seek to limit the ratio of certain classes of loans to the total loan portfolio. The most common limitation is the ratio of real estate loans to savings deposits, which is also subject to a legal maximum. The number of banks using such ratios among the 65 included in the survey, and the maximum ratios favored, are:

Loan Class Ratio	Number of Respondent Banks Using Ratio	Mean of Maximum Ratios Considered Desirable
Term loans to total loans	26	17%
Term loans to deposits	17	9
Consumer loans to total loans	31	20
Consumer loans to deposits	21	13
Real estate loans to savings deposits	41	51

One bank replied that it utilizes the ratio of consumer and real estate loans to time deposits, and considers 61% a desirable maximum. Another bank uses the ratio of term and real estate loans to total deposits, and regards 15-20% a desirable maximum range for this ratio.

The Federal Reserve Bank of New York, which compiles data on term loans made by the 10 largest New York City banks, reported that 55%

of their business loans were classified as term loans on October 12, 1960. The ratio had been 57% a year earlier. As defined for this survey, however, term loans include short-term borrowing under a revolving credit or stand-by loan agreement that permits the borrower to renew the notes repeatedly for periods as long as two years or more. In previous surveys, and under the practice followed by many banks, loans under revolving credit or stand-by agreements were not included among term loans.¹

Sources of Additional Loanable Funds

Commercial banks obviously cannot expand the proportion of loans and cut back the proportion of U. S. Government obligations in their portfolios indefinitely. Hence, commercial banking will have to look to expedients other than changes in the composition of earning assets to assure its ability to serve credit needs that future economic growth will generate.

Proposals for increasing the flexibility of the commercial banking system, to offset its lessened ability to lift loan ratios, are surveyed in the following section.

¹ *Monthly Review*, Federal Reserve Bank of New York, February, 1961.

VIII Increasing the Flexibility of the Commercial Banking System

The ratio of loans to earning assets of commercial banks may rise further under present-day asset management policies, but only to a limited extent, the preceding section indicated. In many banks, the ratio of loans to deposits at recent peak levels was not far below the maximum regarded as desirable in the light of liquidity, capital adequacy and asset quality considerations.

As economic growth expands the demand for bank credit, therefore, commercial banks will have to rely less upon shifts in the composition of their assets and more on expanding the total of their loanable and investable funds, if they are to make

as large a contribution to satisfying credit demands in the future as they have in the past.

A number of remedial measures have been proposed to maintain a flexible commercial banking system, one that will be able to serve expanding loan demands within the framework of the national economic policy objectives of sustainable growth without inflation. The need for such measures becomes greater as the ratio of loans to earning assets approaches a maximum desirable level. The proposals are:

1. Lessened reliance on monetary restraint and greater use of fiscal policy to keep economic

growth within a sustainable rate and to combat inflation.

2. Broadening the impact of credit restraint so that its effect will not be concentrated almost exclusively upon the commercial banking system.
3. Increasing the commercial banks' share of the growth of deposit-type savings.
4. Increasing the proportion of the liquidity balances of businesses and others carried in time deposit accounts in commercial banks.
5. Reducing legal reserve requirements of member banks.
6. Increasing the mobility of resources within the commercial banking system, to strengthen the ability of individual banks to meet credit needs of its customers.

Each of these proposals is discussed below.

Lessened Reliance on Bank Credit Restraint

Primary reliance was placed during the 1950's on restraint of commercial bank credit expansion to keep economic growth within a sustainable rate and to resist inflation. And pressure to hold down the volume of demand deposits was all the greater because turnover of such deposits in banks outside leading centers increased by 42% between 1950 and 1959.

Within the Federal Reserve System, question has been raised whether an unduly heavy burden was not placed upon commercial bank credit restraint during the 1950's, and whether the desired objectives would not be achieved more surely and efficiently if supplemented by more aggressive use of fiscal policy as a restraining influence.

Testifying before the Joint Congressional Economic Committee, Chairman William McC. Martin of the Board of Governors of the Federal Reserve System said on March 7, 1961:

In combating inflation in the past, undue reliance has perhaps been placed upon monetary policy. I can readily agree with those who would have fiscal policy, with all its powerful force, carry a greater responsibility for combating inflation, and I am encouraged to think that this may be likely in the future. If we do this, we should more nearly achieve our over-all stabilization goals, along with some reduction in the range of interest rate fluctuation.

President Alfred Hayes of the Federal Reserve Bank of New York said:

For years, monetary policy has had to carry much the greater part of the burden that fiscal and monetary policy should share. As a result, the effects of needed restraint have been sterner than would otherwise have been necessary.¹

A Treasury budget surplus, by reducing the volume of private spending, affects the economy in much the same way as does credit restraint. In a discussion of the "Interrelation of Monetary and Fiscal Policies", the Federal Reserve Bank of Chicago said:

Smaller deficits or larger surpluses would make appropriate easier credit conditions; looked at the other way, larger deficits and smaller surpluses make necessary greater credit restrictions throughout the course of the business cycle if a given target level of spending is to be achieved. The more or less continual use of debt rather than taxes to finance Government spending implies the development of substantially greater restraints on private credit financing than would be necessary if the budget were basically in balance.²

Not only budget surpluses, but also increased use of long-term offerings in public debt management and greater restraint on the part of organized labor and industry in wage and price actions, would lighten the task of credit restraint when

¹ *Monthly Bulletin*, Federal Reserve Bank of New York, June, 1960, Page 101.

² *Monthly Bulletin*, Federal Reserve Bank of Chicago, February, 1960.

boom conditions and inflation develop. To the extent that these measures would lessen the magnitude and shorten the duration of net reserve deficiencies for the member banks as a whole at such times, demand deposits could be expanded at a faster rate than the 2% annual average of the years from 1951 to 1959. This would largely add to the ability of commercial banks to expand loans to credit-worthy customers.

Broadening the Impact of Credit Restraint

Credit restraint is now exerted almost exclusively through creating a shortage of reserves for member banks, in order to curtail their lending and investing. The reason given for applying credit restraint to this one segment of the nation's financial system is that commercial banks alone, through the creation of demand deposits, expand the active money supply. It is argued also that other lending institutions are affected indirectly by credit restriction because higher interest rates depress prices of securities they hold, so that they are discouraged from selling securities to obtain loanable funds.

This view of credit restraint has been widely questioned among economists and bankers in recent years. The critics have pointed out that:

1. Higher interest rates during periods of credit restraint enable thrift institutions that are not subject to rate ceilings to attract a larger volume of funds by paying higher rates of return. These institutions are thereby able to expand their lending at a time when the Federal Reserve authorities seek to curtail credit expansion to combat boom and inflation. Savings and loan associations had record gains in savings capital in 1956, 1957 and 1959, years when the Federal Reserve System was pursuing a credit policy of active restraint.

2. When thrift institutions attract funds out of commercial banks by offering higher interest rates, they increase the turnover of bank deposits. Demand deposit turnover increased at a rate of over 3½ % per annum, compounded, in banks in centers outside New York, and at a rate of over 6%

in New York City banks, in the decade ended 1960. The stimulation to economic activity imparted by the higher deposit turnover calls for more credit restraint, and thus gives rise to further restrictive measures applicable to commercial banks. This process sets up a vicious circle of commercial bank credit restriction.

3. Expansion of ownership of savings and loan association shares and other forms of "near money" increases liquidity in the economy, which is a stimulus to the aggregate volume of spending and so tends to counteract credit restriction by the Federal Reserve System. This also leads to more drastic credit restraint on the banks.

4. Credit restraint is made less effective when the Federal Government encourages credit expansion simultaneously through its loan insurance and guarantee programs and through direct Federal lending to favored borrowers.

Extension of the impact of a policy of credit restraint to other financial institutions and coordination of Federal credit programs with Federal Reserve policy would make monetary policy both more effective and more equitable in its application, advocates of remedial action in these spheres contend. It has been suggested that flexible reserve requirements be applied to other lending and investing institutions, to be held in the form of U. S. Government securities or demand deposit balances in banks. Such reserve requirements, proponents of this proposal maintain, would restrain the rise in the velocity of turnover of bank demand deposits in boom periods. Restriction of commercial bank lending and investing would then be correspondingly less drastic, so that the flexibility of commercial bank resources would have to be curtailed to a lesser extent in periods of credit restriction.

Increasing Commercial Banking's Share of the Growth of Deposit-Type Savings

To foster sustainable growth of the economy without inflation, economic policy has limited expansion of the money supply and stimulated sav-

ing. Demand deposits in commercial banks, the chief element in the active money supply, increased by \$32 billion or 27% between 1945 and 1959. Deposit-type savings in banks, savings and loan associations and credit unions increased by \$108 billion, or 200%, over this same period.

Deposit-type savings provided more than three times the volume of loanable funds furnished by expansion of bank demand deposits during this period. The difference is even wider if account is taken of the high legal reserve requirements that must be maintained against bank demand deposits. Such savings have become by far the largest source of loanable and investable funds in the economy.

The decline in the proportion of deposit-type savings attracted by commercial banks lessens their ability to serve the credit needs of their customers. It is true that competing thrift institutions which have increased their share of such savings are enabled to expand their lending or investing. However, as relatively specialized institutions, they do not impart the flexibility to the credit supply that commercial banks do as general purpose financial institutions.

The reduction in the share of commercial banks in the growth of deposit-type savings lessens their ability to expand loans and investments to meet the needs of a growing economy. It also lessens the flexibility of the nation's financial system as a whole in adapting itself to the ever-changing pattern of credit requirements. The great increase in the share of deposit-type savings attracted by savings and loan associations presents less of a problem in this connection when credit demands are strongest in the mortgage field. But when the demand for home mortgage financing declines while demands for funds from business, from State and local governments or from consumers expand, the consequent lessened flexibility of the nation's credit-granting mechanism may present problems.

In competing for savings deposits, commercial banks possess the advantages of a large number of banking offices and the ability to offer a complete

one-stop banking service. They are placed at a disadvantage by tax and regulatory handicaps, which have prevented them from paying as high a rate of return as competitors. Insured commercial banks paid an average of 2.4% on savings and other time deposits in 1959, as compared with 3.7% paid by savings and loan associations, 3.2% by mutual savings banks and 3.7% by credit unions.

More equal opportunity to compete for savings deposits and increased efforts to attract such deposits by bank managements would greatly strengthen the ability of commercial banking to serve future growth of credit needs. This would be all the more true because savings deposits are relatively stable in character, are subject to a low legal reserve requirement and require little increase in liquidity to meet deposit withdrawals.

Increasing Liquidity Balances Held in Banks

Commercial banks can attract additional liquidity balances of large business corporations and others by offering rates of interest on time deposits that are more competitive with yields on short-term Treasury obligations, finance company paper and other liquidity media.³ This would be facilitated by liberalization or removal of the Regulation Q ceiling on time deposit interest rates, at least as it affects certificates of time deposit of large denomination and large time deposit balances. By issuing transferable certificates of deposit for large corporate time deposit balances, a very high degree of liquidity is provided the corporation.

A number of corporations maintain "working balances" in demand deposit accounts in amounts considered sufficient for current needs and to compensate banks for services rendered. Additional liquid resources are then invested in U. S. Government obligations or other media for the invest-

³ See "Bank Liquidity and Time Deposits", an address by Howard D. Crosse, Vice President of the Federal Reserve Bank of New York, before the National Credit Conference of the American Bankers Association, January 24, 1961.

ment return they provide. Commercial banks in the past have hesitated to compete aggressively for corporate time deposits because their volatility makes it difficult to derive sufficient earnings on such funds to justify payment of a competitive rate of interest. Moreover, payment of interest may discourage maintenance of adequate working balances in demand deposit accounts.

Advocates of aggressive efforts to attract corporate liquidity balances into commercial bank time deposits by the payment of competitive interest rates argue that:

1. The commercial banks benefit from time deposit balances even when such funds are invested to a large extent in short-term Treasury securities without profit. The added liquidity thereby included in bank portfolios permits use of a larger proportion of the other funds of a bank for the making of loans.

2. The volume of added deposits that could be attracted from other liquidity media could be quite substantial, particularly in future periods of credit restraint and higher interest rates.

Reasons advanced for hesitating to attract large corporate and other liquidity balances into commercial bank time deposit accounts by offering high rates of interest are:

1. The fact that cash holding of business corporations increased far more than holdings of U. S. Government securities in the post-World War II period, despite the sharp rise in rates of return yielded by the latter during the 1950's. This is shown by a comparison of cash and U. S. Government security holdings of all business corporations as reported by the Securities and Exchange Commission (in billions):

End of	Cash	U. S. Government Securities
1945	\$23.8	\$22.3
1950	28.1	19.7
1955	34.6	23.5
1960	37.0	19.7

While liquidity balances of corporations have also been invested in finance company paper, tax-

exempt obligations and other media, all outlets other than U. S. Government securities attracted less than a fifth of the funds placed in such liquidity instruments by even the largest corporations at the end of 1957, a survey showed.⁴

2. A relatively limited number of corporations account for a very large proportion of investments in marketable securities by business corporations. The survey cited showed that the 250 largest non-financial corporations at the end of 1957 held 20% of the cash and 45% of the total marketable securities held by all such corporations. The concentration of marketable security holdings is even greater than these ratios indicate, since 74 of the 250 corporations held no marketable securities on the survey date.

3. Corporate holdings of U. S. government securities have varied chiefly with Federal income tax liabilities and the ratio of internal cash flow from depreciation and retained earnings to plant, equipment and inventory outlays, a recent study showed. Changes in yields on Treasury issues were found to have been a minor factor in fluctuations of such holdings.⁵

Reducing Legal Reserve Requirements of Member Banks

Despite the vigorous demand for loans from their customers, commercial banks have had to immobilize a considerable part of their funds in the form of cash assets. Total cash assets of all commercial banks increased by \$14.7 billion between 1945 and 1959, an amount that substantially exceeded the \$10.6 billion of additions to their capital funds made by the banks during the period. In other words, for the banking system the growth of capital funds was fully offset, as a source of loanable and investable funds, by the expansion of cash assets.

⁴ Donald P. Jacobs, "The Marketable Security Portfolio of Non-Financial Corporations", *The Journal of Finance*, September, 1960.

⁵ *Corporate Participation in the Government Securities Market*, Monthly Review, Federal Reserve Bank of Kansas City, December, 1960.

The most inflexible portion of the cash assets of commercial banks consists of legally required reserves. For member banks of the Federal Reserve System, required reserves increased from \$14.5 billion at the end of 1945 to \$18.5 billion at the end of 1959.

The sole function of legal reserve requirements of commercial banks is to serve as an instrument of credit control. For this purpose, the level of reserve requirements has limited significance. Whatever the reserves required, the Federal Reserve authorities can make their policy effective by means of open market operations that will create either net free reserves or a net deficiency of reserves as circumstances require. The efficacy of credit control would not be lessened by a lowering of legal reserve requirements, provided such action is not taken in a period of active credit restraint and the effect on the banks' reserve position is offset by sales of Government securities by the Federal Reserve banks.

The Economic Policy Commission of the American Bankers Association has proposed a gradual reduction in legal reserve requirements to 10% of demand deposits and 2% of time deposits, with the demand deposit reserve requirement subject to increase up to 12% and reduction to 8% by the Board of Governors. Such a lowering of the level of required reserves for member banks would free some \$6 billion of reserves as compared with current requirements, and permit a corresponding increase in loans or investments without material effect on the actual liquidity of member banks. Additional loanable funds would be freed by any accompanying reductions in reserve requirements of non-member banks.

Increasing Mobility of Banking Resources

Individual banking offices are limited in their ability to satisfy an increase in loan demands from customers by the volatility of their deposits, liquidity needs and the adequacy of capital funds. Other banks and banking offices may have an excess of lending capacity at the same time. The greater the mobility of resources within the com-

mercial banking system, the more able it is to meet increases in loan demands as they occur.

The correspondent banking system has imparted a large measure of mobility to the nation's banking system. Correspondent banks in cities make loans to their bank customers, participate in larger loans to borrowers and, through advice on asset management, assist country banks in making fuller use of their lending capacity.

Mobility is imparted to the banking system also by the development of regional banking. A bank whose offices serve an area that includes industrial, agricultural, commercial and residential communities of varied size is able to mobilize loanable funds from the entire area and channel them to customers that require credit. The loan ratio of such a bank can be relatively high in periods of active credit demands because the deposit trend tends to be more stable and some classes of customers may be repaying loans while others expand their borrowing.

Regional banks shift funds from offices that have an unused margin of lending capacity to others where the demand exceeds the supply of loanable funds. They thereby add to the flexibility of commercial banking in meeting increases in loan demands.

A Program for Flexibility

Lessened flexibility in commercial bank portfolios that has resulted from the great shifts in the composition of assets since 1945 requires increased ability to expand the total volume of bank credit, if banking is to keep pace with the expansion in loan demands that will be generated by future economic growth.

Each of the measures discussed above would help the commercial banking system to retain its leading place among the sources of credit for the American economy as the banks' loan ratios approach levels beyond which managements do not regard it as wise to go. Implementation of such measures would restore to commercial banking the flexibility that enabled the banks to make so large a contribution to the financing of post-war economic growth.

Summary and Conclusions

The most basic change in the composition of commercial bank assets has been the rapid rise in the ratio of loans from 21% to 59% of earning assets between 1945 and 1959. This constitutes a return towards the historic asset distribution pattern of American banking. Pages 7 to 8.

Other major bank asset changes have included the expansion of consumer and mortgage loans at the expense of security lending, lengthening of average maturities in loan portfolios, and a sharp rise in holdings of State and local government securities. Pages 8 to 10.

Causes of Asset Shifts

The drastic asset shifts of the post-World War II period resulted from an unprecedented expansion of private credit demands, almost exclusive reliance on bank credit restraint to keep economic growth within a sustainable rate and to combat inflation, and the contraction of commercial banking's share of the flow of deposit-type savings. Pages 10 to 12.

Commercial bank managements, to meet the borrowing needs of their customers, reduced their holdings of U. S. Government securities by a third between 1945 and 1959. This helped to make possible a fourfold expansion of loans and of investments in State and local government securities. The increase in commercial bank lending somewhat exceeded the expansion of all private debt, so that commercial banks retained their role as the chief credit-granting institutions in the economy during this period. Pages 12 to 14.

Effects on Asset Quality

The over-all quality of bank assets is determined mainly by earnings and cash flow coverage of debt service requirements of borrowers. The traditional quality test—the self-liquidating character of the transactions financed—had proved unreliable and unrealistic. Pages 14 to 15.

The quality of business loans is much higher than in the pre-World War II era, the decline in the ratio of interest payments to income avail-

able to pay interest of all nonfinancial corporations indicates. Pages 15 to 16.

While home mortgage debt outstanding has undergone a manifold expansion, its burden has been lightened by the spread of home ownership, the higher proportion of homes mortgaged, and universal adoption of the long-term, amortized mortgage. Because of more careful selection of risks and the high ratio of Government-underwritten mortgages held, commercial bank mortgage loan portfolios are of substantially better than average quality. Pages 16 to 17.

The burden of consumer borrowing has been lessened by the wide distribution of the debt burden and ownership of liquid assets by a majority of borrowers. Commercial banks hold better than average quality of personal loans because of selection of risks. Pages 17 to 18.

State and local government interest payments were 3.1% of revenues in 1959. Banks' purchases of tax-exempt obligations have been concentrated in higher-rated issues of shorter maturity. Page 18.

Assumption by the Federal Government of responsibility for safeguarding the stability of the economy and preventing depressions tends to strengthen the quality of loans and investments generally. Pages 18 to 19.

Effects on Liquidity

The decline in conventional measures of bank liquidity since 1945 has no material significance, since liquidity was overwhelmingly redundant at the end of World War II. Liquidity needs and the requisite resources to meet them must be determined by each bank for itself, since the rise in the loan ratio has reduced the wide margin of excess liquidity that the banks possessed in the early post-war years. Page 19.

Liquidity needed for net deposit withdrawals is indicated by past trends or projections of expected future behavior of the several types of deposits of the bank. Liquidity required for an

increase in loan demands is affected by seasonal, cyclical and long-term economic trends, Federal Reserve credit policy and the flow of repayments on outstanding loans. Pages 19 to 21.

With the rapid rise in the loan ratio, the Government security portfolio of commercial banks is regarded increasingly as a source of liquidity more than a source of earnings. This has led to a sharp decline in holdings of Treasury issues maturing in more than five years.

Pages 21 to 22.

The enhanced liquidity role of the Government security portfolio has made the pledging of securities to secure public deposits a growing problem, since such pledge hampers the use of these securities as a liquidity medium. Page 22.

Borrowing becomes a more important source of liquidity for the commercial bank as its margin of excess liquidity narrows. A broadening of the definition of eligible paper and of borrowing's role under Regulation A is timely, in view of the changes that have taken place in the composition of commercial bank assets.

Pages 22 to 23.

Projections of a bank's cash receipts and disbursements has an important place in liquidity management. They help to estimate liquidity needs and resources over a period of time, and so to lessen the provision for contingencies required in setting liquidity requirements. Pages 23 to 24.

Liquidity promises to be the chief factor limiting the further rise in the proportion of loans to assets of commercial banks. Page 24.

Effects on Capital Adequacy

The ratio of capital funds to "nonrisk" assets of commercial banks is only a very rough indicator of capital adequacy. Inclusion of loan valuation reserves with capital funds and government-underwritten mortgages with nonrisk assets refines this measure to some extent.

Pages 24 to 25.

The quality and liquidity of assets and the stability of deposits affect the adequacy of capital funds. Asset classifications have been

developed by the Federal Reserve authorities to reflect relative quality. Adequate liquidity, by lessening the possibility that longer-term securities would have to be sold at a loss to provide needed cash, safeguards a bank's capital funds. Pages 25 to 26.

The higher rate of return from loans lessens commercial banking's need for the leverage of a low ratio of capital funds to earning assets to realize a reasonable rate of return on capital. Added earnings provided by a higher loan ratio facilitate the building up of capital funds, both through retention of profits and the sale of new stock. Postwar asset shifts have thus helped banks to maintain capital funds at an adequate level. Pages 26 to 27.

Impact on Bank Earnings

The increase in the proportion of loans to total assets accounted for a quarter of the rise in gross operating earnings of commercial banks between 1945 and 1959. The rise in proportion of consumer and other loans bearing relatively higher interest rates also contributed to the growth of operating earnings, which was needed to keep pace with mounting expenses and taxes and to provide a return on additional capital funds.

Page 29.

More than half of the increase in net operating earnings before taxes of commercial banks between 1945 and 1959 was attributable to the sharp rise in the ratio of loans to earning assets.

Page 29.

As loan ratios approach a maximum, commercial banks must look to other ways than increasing the proportion of loans to earning assets to expand operating earnings, if they are to offset future increases in costs and to provide a return on the additions to their capital funds that banks will require. Page 29.

How High a Loan Ratio?

Demands for loans from commercial banks are bound to increase in the future with economic growth, although the rate of increase may fall

short of the 11% annual average of the 1945-59 period. Page 30.

How much higher the loan ratio will rise will be determined by bank asset management policies, which have undergone a constant evolution. The earlier view was that commercial banks should limit themselves to short-term, self-liquidating and readily shiftable assets. In the 1930's and 1940's, some banks adopted a program of asset allocation to the several classes of deposits and capital funds to achieve a balance between liquidity, quality and earnings objectives.

Pages 30 to 31.

This relatively static approach has given way to a dynamic "conversion of funds" approach, with loan demands receiving priority after primary reserves and liquidity have been provided for. Funds in excess of primary and secondary reserve and loan requirements are invested in marketable securities, to provide resources for expansion of loans to meet seasonal, cyclical and long-term increases in demands from borrowing customers.

Pages 31 to 32.

The ratio most widely used in bank asset management is loans to deposits, which is employed by 89% of banks surveyed. The maximum for this ratio favored by respondent banks ranged from 45 to 80%, with three-fourths favoring a maximum of less than 65%, and one-third less than 60%. These favored maximum ratios compared with an actual ratio of loans to deposits of 57.6% for central reserve city member banks and 52.5% for reserve city member banks at the end of 1959.

Pages 32 to 34.

Increasing the Flexibility of Commercial Banking

To meet future increases in loan demands, commercial banks will have to look more to expansion of their loanable and investable funds, and less to shifts in the composition of earning assets, than in the post-World War II period. A number of proposals have been advanced to maintain the flexibility of the commercial banking system now that loan ratios are nearer acceptable maximum levels.

Pages 34 to 35.

Lessened dependence on bank credit restriction and more reliance upon fiscal policy to restrain booms and combat inflation are advocated within the Federal Reserve System. This would provide more leeway for the expansion of earning assets by commercial banks to meet future growth in credit demands.

Pages 35 to 36.

Broadening the impact of credit restraint upon the nation's financial system would make restrictive monetary policy more effective. When monetary restraint is applied almost exclusively through the commercial banking system, as was done during the 1950's, its effectiveness is dampened by an increase in velocity of turnover of demand deposits.

Page 36.

More equal opportunity to compete for savings deposits has been widely urged to increase the flexibility of commercial banking resources. Regulatory and tax equality for commercial banks in the savings field are required to accomplish this, commercial bankers have maintained. Attracting corporate liquidity reserves from short-term investments into time deposit accounts would also contribute to the expansion of commercial banking resources.

Pages 36 to 38.

Lowering bank legal reserve requirements, which are much higher than required to perform their one function of credit control, would add substantially to commercial banking's ability to serve the credit needs of the economy.

Pages 38 to 39.

Mobility of resources within the commercial banking system is of vital importance in enabling individual banks to serve customer credit needs as they develop. The correspondent banking system has greatly contributed to such mobility. It has also been enhanced by the development of regional banking.

Page 39.

These proposals have been advanced in the search for a program that would restore to commercial banking the flexibility that was provided during the post-World War II period by shifts in the composition of assets.

Page 39.

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